

VIEWS OF LONELINESS & CREATIVITY: THE RELATIONSHIP BETWEEN  
LONELINESS & HEALTH-RELATED QUALITY OF LIFE

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## **ABSTRACT**

### **VIEWS OF LONELINESS & CREATIVITY: THE RELATIONSHIP BETWEEN LONELINESS & HEALTH-RELATED QUALITY OF LIFE**

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Although there is extensive literature documenting the effects of loneliness on mental and physical health, very few studies have investigated how individuals *view* loneliness. As a result, this study examined the relationship between views of loneliness and several different variables including level of loneliness, creativity, and mental and physical domains of health-related quality of life (HRQL), as well as how views of loneliness may mediate the relationship between such factors. Results indicated that level of loneliness and creativity were significantly negatively correlated. In addition, there were several trends (approaching traditional significance levels): views of loneliness were positively correlated with level of loneliness, views of loneliness were positively

associated with creativity, and views of loneliness were positively associated with mental health scores. Additionally, age was found to be negatively correlated with views on loneliness. Multiple regression also yielded significant results, with age successfully predicting views of loneliness; each of the major variables represented by the survey instruments (level of loneliness, creativity, and the mental and physical health subscales of HRQL) were significant as well. Together, the results provide further insight into the role that views and meanings of loneliness can have in one's health and behaviors.

## **CHAPTER I: INTRODUCTION**

Loneliness is becoming an all-too-common experience in today's world. Millions of Americans report feeling alone or having less rewarding relationships than they would prefer to have (Ponzetti, 1990). In fact, Jackson, Soderlind, and Weiss (2000) found that loneliness is not only on the rise in today's society, but that almost 26% of the American population has reported strong feelings of loneliness within the previous two weeks.

Although loneliness exists among all age groups, adolescents and college students are particularly susceptible to it (Ponzetti, 1990), perhaps due to the transition of moving away from home and becoming adults, as well as developing individuality, autonomy, and independence (Özdemir & Tuncay, 2008). Several other factors have been associated with loneliness, including changing to a new school (Buchholz & Catton, 1999), making less money, coming from a divorced family (Özdemir & Tuncay, 2008), having a chronic illness, living alone (Theeke, 2009), having lower rates of education, chronic stress (Cacioppo, Fowler, and Christakis, 2009), or even moving to a different social group (Greer, 1953).

Loneliness has been tied to various facets of both mental and physical health, which accordingly can have a significant impact on one's health-related quality of life (HRQL). In fact, studies have shown that not only do lonely individuals report a lower quality of life, but also report poorer mental and physical health scores, compared to those who are not lonely (Liu & Guo, 2007). Specifically, several research studies have

linked loneliness with depression (Aanes, Mittelmark, & Hetland, 2010; Cheng & Furnham, 2002; Han & Richardson, 2010; Lasgaard, Goossens, & Elklit, 2011; Liu & Guo, 2007; Segrin & Passalacqua, 2010; Theeke, 2009), lower subjective well-being (Cacioppo et al., 2002), anxiety (Applebaum, 1978; Liu & Guo, 2007; Sprangers et al., 2010), and even Alzheimer's Disease (Wilson et al., 2007). Those who are lonely may also suffer higher rates of mortality (Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010), cardiovascular disease (Aanes et al., 2010; Van Rockel, Scholte, Verhagen, Goossens, & Engels, 2010), difficulties with sleep (Hawkley, Preacher, & Cacioppo, 2010), and engage in more risky health behaviors (Shankar, McMunn, Banks, & Steptoe, 2011; Theeke, 2010). Such research suggests that loneliness is not only linked to a lower HRQL, but also is associated with lower mental and physical functioning.

Creativity has also been linked to loneliness by some theorists (Moustakas, 1961; Tick, 1988). A multi-faceted construct (El-Murad & West, 2004), creativity has been considered one of the most difficult traits to measure by psychologists (Hocevar, 1981). Despite measurement issues, several tests have been designed to attempt to compute creativity levels, including personality and biographical inventories, peer ratings, and judgment of creative products, although Hocevar (1981) believed that self-reported creative behaviors provide one of the best assessments of creativity. Concerning the relationship between creativity and loneliness, Tick (1988) asserted that loneliness is a prerequisite to being creative, as it helps the individual to experience nonconformity and become more aware of their thoughts, feelings, and knowledge, which are needed in self-expression. Creativity has also been associated with health, with those experiencing mental illness or incapacitating physical illness reporting lower levels of creativity

(Eisenman, 1990). For some individuals with chronic illness, creativity can provide an expressive outlet (Reynolds, 2004), in addition to helping to create a sense of mastery, increasing brain plasticity, and encouraging activities in which social support is likely to be gained (Cohen, 2006).

A relatively overlooked area in the study of loneliness is how individuals view the experience of being lonely (Rosedale, 2007). Based on the health associations previously listed, it may be easy to equate loneliness with poor health, and that is indeed what is reflected in much of the literature, with loneliness being depicted as a negative experience (Fitts, Seby, & Zlokovich, 2009; Long, Seburn, Averill, & More, 2003; Mellor, Firth, Hayashi, & Cummins, 2008; Neto & Barros, 2003; Ponzetti, 1990; Rosedale, 2007). In contrast to the majority, Rosedale (2007) suggests that loneliness be viewed not as a problem, but instead as an experience with benefits, particularly among those who are ill, helping individuals to find new meaning and grow closer to loved ones. Moustakas (1961) reaffirms this view, indicating that while loneliness may be distressing, it helps individuals to grow, develop deeper connections and insight, and become more understanding.

### **Definitions of Key Terms**

The following key terms were defined as follows in the current study.

#### **Loneliness**

Loneliness is defined as an inconsistency between the relationships that an individual desires, and those that actually exist, characterized by feelings of distress and an intense need for belonging (Fitts et al., 2009; Mellor et al., 2008; Segrin & Passalacqua, 2010).

**Quality of Life**

Quality of life is defined as a combination of one's functional status, level of life satisfaction, well-being, and contentment (Taylor, Gibson, & Franck, 2008).

**Health-Related Quality of Life**

HRQL is defined as a subcomponent of quality of life that involves satisfaction with one's physical, psychological and social functioning abilities (Taylor et al., 2008).

**Creativity**

Creativity refers to the abilities such as being imaginative, innovative, original, and engaging in novel problem-solving behavior (El Murdad & West, 2004; Kaufmann, 2003).

**Views on Loneliness**

Views on loneliness refer to how an individual perceives the experience of being lonely, whether it is considered a distressing experience with negative benefits, a positive experience with positive benefits, or some combination of the two.

**Significance of Study**

Research indicates that loneliness is associated with poorer physical and mental health, as well as being interconnected with creativity in complex and intricate ways. Because there is a paucity of studies on views of loneliness in the research literature, this thesis was designed to address the role that such opinions of loneliness may have on HRQL, creativity, and levels of loneliness itself. Therefore, two overriding questions guide this study. First, do individuals, specifically college-aged students, have positive views of loneliness? Second, are views on loneliness associated with levels of loneliness,

HRQL, and creativity? In addition to these questions, correlations between level of loneliness, HRQL, views on loneliness, and creativity will also be examined.

### **Research Hypotheses**

Several hypotheses were formulated in order to examine views of loneliness.

- 1) Are views of loneliness associated with level of loneliness?
  - It is hypothesized that views of loneliness will be negatively correlated with one's level of loneliness, in that those who view loneliness as being a positive experience will have lower levels of loneliness, while those who have more negative views of loneliness will have higher levels of loneliness. Viewing loneliness as a negative experience could cause an individual to become more withdrawn and unhappy, leading to higher levels of loneliness; whereas viewing loneliness as a positive experience may result in more acceptance of the condition and therefore potentially lower levels of loneliness.
- 2) Do levels of loneliness correlate with creativity?
  - It is hypothesized that levels of loneliness will be positively associated with creativity.
- 3) Do views on loneliness correlate with creativity?
  - It is hypothesized that views on loneliness will be positively associated with creativity.
- 4) How is HRQL associated with views on loneliness, level of loneliness, and creativity?
  - A. Is level of loneliness associated with HRQL?



- It is hypothesized that a strong negative correlation will exist between one's level of loneliness and HRQL.

B. Are views of loneliness associated with HRQL?

- It is hypothesized that HRQL will be related to views on loneliness, with more positive views being associated with higher scores on the HRQL measure, and more negative views being associated with lower scores.

C. Is level of creativity associated with HRQL?

- It is hypothesized that higher levels of creativity will be positively associated with HRQL.

5) Do views on loneliness mediate the relationship between the level of loneliness and HRQL?

- It is hypothesized that views of loneliness explain the relationship between level of loneliness and HRQL.

6) Do views on loneliness mediate the relationship between creativity and HRQL?

- It is hypothesized that views of loneliness mediate the relationship between creativity and HRQL.

## **CHAPTER II: LITERATURE REVIEW**

The literature review is organized into five sections. The first section describes loneliness and its prevalence, risk factors, personality attributes, and approaches to classifying it. The second section describes the relationship between loneliness and health, including HRQL, and the relationship between loneliness and mental health, physical health, and health behaviors. The third section addresses creativity, such as characteristics of the creative individual, research in creativity, as well as the relationship between creativity and loneliness, and creativity and health. The fourth section examines past and present views on loneliness, while the fifth section provides a summary of the information that lead to the current study.

### **Loneliness**

Regardless of race, sex, age or culture, all humans share the common bond of being social creatures (Mellor et al., 2008). As a result, humans share a need for belonging, in which we are motivated to sustain relationships with others. This drive is not only reflected in the many relationships that humans identify themselves by (e.g., wife, son, mother), but also personality traits such as friendliness, shyness or outgoingness. Cacioppo et al. (2009) have found that the average individual spends about 80% of their conscious time in the company of others, indicating that relationships with others, no matter how large or insignificant, are central to who we are as human beings.

Hughes, Waite, Hawkley, and Cacioppo (2004) explain that when this central need for belonging is not met, loneliness results. Specifically, loneliness occurs when an inconsistency exists between the relationships that an individual aspires for, and the ones that actually are present (Fitts et al., 2009; Mellor et al., 2008; Segrin & Passalacqua, 2010). In her article on loneliness, Greer (1953) notes that a certain level of loneliness is a normal, unavoidable aspect of human life, unless individuals aspire to forfeit all of their independence. Loneliness can occur in both qualitative and quantitative ways, with either a lack of close relationships, or fewer friends than would be desired, respectively. Loneliness is experienced by humans across the world, as noted in research conducted in Turkey (Özdemir & Tuncay, 2008), and can be affected by factors such as previous experiences, culture, and other individual circumstances and needs (Ponzetti, 1990). Applebaum (1978) notes that one's predisposition to loneliness varies from person to person, although it appears to be inversely related to one's degree of independence. It is important to note that loneliness is a subjective, rather than objective experience (Fitts et al., 2009; Mellor et al., 2008; Neto & Barros, 2003), determined by the individual's perception of relationships, and not his or her amount of social isolation. Loneliness, which may fluctuate in incidence and strength (Bernardon, Babb, Hakim-Larson, & Gragg, 2011), should also be distinguished from solitude, or time spent alone (Long et al., 2003). Although loneliness is sometimes considered a type of solitude in which an individual may feel anxious, sad, or uncomfortable, the two are not synonymous. That is, not all individuals seeking seclusion are lonely.

Taken as a whole, research indicates that loneliness is a normal phenomenon (Greer, 1953), marked by feelings of distress about the individual's desire for

relationships with other people (Fitts et al., 2009), and is frequently associated with independence (Applebaum, 1978). Additionally, loneliness should be distinguished from solitude (Long et al., 2003), as the two are not considered to be the same experience.

### **Prevalence**

Loneliness is a common problem for millions of Americans (Ponzetti, 1990). It is especially common in Western civilization, as there is a greater emphasis on individuality and independence, which can make individuals more susceptible to being lonely (Özdemir & Tuncay, 2008). Among American adults, approximately 25% report regularly feeling lonely (Junttila & Vauras, 2009), whereas 20% of older adults report feeling lonely (Theeke, 2009). Additionally, 8-12% of children and adolescents experience feelings of loneliness (Junttila & Vauras, 2009), with some children as young as five or six years of age reporting it (Bonetti, Campbell, & Gilmore, 2010). While loneliness exists across every generation, young adults and adolescents appear to be the most susceptible (Özdemir & Tuncay, 2008; Ponzetti, 1990; Van Rockel et al., 2010), particularly college students. Wei, Russell, and Zakalik (2005) found that 75% of new freshman at college reported feeling lonely at one time or another during their first two weeks at school, although Van Rockel et al. (2010) note that levels of loneliness typically crest in early adolescence and subsequently slowly start to decline. Males typically have higher levels of loneliness than females, and are additionally more likely to experience worse social penalties and damaging self-evaluations if they admit suffering from it (Ponzetti, 1990).

## **Risk Factors and Predictors of Loneliness**

As previously stated, adolescents and young adults during college years are particularly susceptible to loneliness. Özdemir and Tuncay (2008) believe such levels are due to the transition of moving away from home, increasing independence and individuality, and the process of becoming adults. Not surprisingly, having weaker relationships with parents and childhood friends also increases the student's chances of being lonely (Ponzetti, 1990). Among adolescents, Buchholz and Catton (1999) note that many lonely experiences stem from situations such as death, departure or hospitalization of loved ones, breakups with their boyfriend or girlfriend, or changing to a new school. In their study on Turkish students, Özdemir and Tuncay (2008) found that students who made less money, were in need of economic support, did not have romantic relationships, and were from divorced families were at higher risk of developing loneliness. Ponzetti (1990) additionally found that male and female students who had lower levels of masculinity and femininity, respectively, were at a higher risk for loneliness, as it decreased the levels of assertiveness in men and self-expression and empathy in females, which can be useful in building and maintaining relationships with others.

Other factors that have been associated with loneliness in the past include being single, having a chronic illness, motor impairments, and living alone (Theeke, 2009) as well as lower rates of education, having less contact with friends and family, undergoing chronic stress, divorce, or widowhood, having marital disagreements, discontentment with one's current living situation (Cacioppo et al., 2009), having fewer siblings (Distel et al., 2010), and using passive coping styles rather than support-seeking, optimistic, or self-assured coping techniques (Cecen, 2008).

According to Greer (1953), loneliness frequently results from shifting to a different location, workplace, or social group, in which one's work is no longer valued, as well as changes in one's family, or even material or economic security. Greer (1953) also explains how loneliness can sometimes occur in groups of people. She notes that in smaller groups, individuals are more likely to feel valued and useful; as group size increases, individuals start to lose that personal value, leading the individual to potentially feel robbed of rank, purpose, or role, which can consequently predispose them to feelings of loneliness.

In recent years, researchers have found evidence to support the role of genetics in loneliness. Sprangers et al. (2010) argue that loneliness has a strong heritable component, with an estimate of approximately 50%. Twin studies by Van Rockel et al. (2010) replicate these results, estimating the genetic component for loneliness to lie within 48 to 55%, potentially caused by interactions with the 5-HTTLPR, a specific type of serotonin transporter gene.

In summary, college students (Özdemir & Tuncay, 2008) who are lacking support in personal relationships appear to be especially susceptible to loneliness, in addition to adolescents who experience life transitions such as moving (Buchholz & Catton, 1999). Stress (Cacioppo et al., 2009), coping strategies (Cecen, 2008), workplace dynamics (Greer, 1953), and even genetics (Sprangers et al., 2010) are also commonly cited associations.

### **Personality Attributes of the Lonely**

Several personality attributes have additionally been linked to loneliness. One of the most prominent and strongly correlated traits is shyness (Booth, Bartlett, &

Bohnsack, 1992; Cacioppo et al., 2006; Fitts et al., 2009; Jackson, Fritch, Nagasaka, & Gunderson, 2002; Ponzetti, 1990), defined as tension, self-consciousness, and inhibition of generally expected social conduct when around acquaintances or strangers (Bardi & Brady, 2010). Fitts et al. (2009) calculated the correlation between shyness and loneliness to be between .40 and .50, indicating a strong association between the two. Jackson et al. (2002) found that shy individuals were more likely to have shortfalls in interpersonal competency, as well as being more likely to expect rejection. Because of the lack of such interpersonal skills, shy individuals were more likely to have less social support, and therefore experienced higher levels of loneliness.

While shyness appears to be one of the most commonly correlated psychological constructs with loneliness, several other personality traits have been associated with it. Ponzetti (1990) explains that lonely students are more likely to have poor self-esteem, negative evaluations about their bodies, appearances, and actions, have an external locus of control, and have lower levels of social support. They are more likely to have pessimistic views, report higher levels of anxiety, hopelessness, and isolation, as well as generally being more cynical and distrusting of individuals. Social perfectionism, or the worry about meeting other's expectations, was also found to be positively correlated with loneliness (Chang, Sanna, Chang, & Bodem, 2008). Bernardon et al. (2011) found that students who had weaker attachment security with friends, family, or romantic partners had higher levels of loneliness, although levels of social support mediated the relationship to some degree. Even students with self-defeating humor styles were more likely to be lonely (Fitts et al., 2009).

Concisely, individuals who are lonely may be more likely to experience characteristics such as shyness (Booth et al., 1992; Cacioppo et al., 2006; Fitts et al., 2009; Jackson, Fritch, Nagasaka, & Gunderson, 2002; Ponzetti, 1990), poor self-esteem, negative evaluations and pessimistic viewpoints about the world (Ponzetti, 1990). Poor attachment security (Bernardon et al., 2011) and social perfectionism (Chang et al., 2008) have also been associated with the condition.

### **Approaches to Loneliness**

While most refer to loneliness as being one type of subjective experience, others have categorized loneliness into different approaches and types. Applebaum (1978) classifies loneliness into four main types: existential, reactive, pervasive/nonspecific, and psychotic. In existential loneliness, the individual experiences loneliness as the result of the process of autonomy and separation. Reactive loneliness results when the individual perceives a loss, whether that be through death, separation, or other means. Those with pervasive or nonspecific loneliness are likely to have lifetime issues with creating and upholding relationships, and can sometimes be seen in those with neurotic, borderline, and schizoid personality disorders. Lastly, psychotic loneliness, which Applebaum (1978) considers to be the most severe type, is constituted by extended degeneration to an infantile state, marked by self-absorption and selfishness.

Somewhat similar to Applebaum's (1978) classifications, Buchholz and Catton (1999) have organized loneliness into three different approaches: psychoanalytical, existential, and interactional. The psychoanalytical approach asserts that loneliness develops during infancy or childhood because of unmet needs. In the existential approach, loneliness results from the individual's recognition that they are alone in the



world, and is frequently used as a motivation for creative works. Lastly, Buchholz and Catton (1999) describe the interactional approach, the result of a combination of character and environmental factors that can interact to create loneliness.

In addition to the categories listed above, McGraw (1992) classifies loneliness into over 10 different groups, including cosmic, cultural, social, emotional, existential, ethical, ontological, communicative, epistemological, and metaphysical. Metaphysical loneliness, which McGraw (1992) considers to be the most all-inclusive form, functions as the foundation and background for many of the other forms of loneliness, and is marked by a feeling of anxiety and discontinuity about the world. Epistemological loneliness, in contrast, is marked by feelings of apprehension in areas such as cognition, or actions; it is frequently experienced by individuals who feel that others are not concerned enough to invest energy into the relationship. Communicative loneliness, as its name implies, results from an individual's inability to communicate effectively with others, such as when the individual has poor social skills. Ontological, also known as intrapersonal loneliness, occurs when the individual feels lost within themselves, subsequently creating issues in terms of self-identity. The fifth type of loneliness, ethical, is marked by feelings of moral loneliness; according to this theory, an individual is responsible for his or her loneliness, and the role that it subsequently plays in their lives and the lives of others.

An additional type of loneliness discussed by McGraw (1992) includes existential loneliness. As discussed above, this type of loneliness endures throughout one's life, and is frequently associated with processes such as individuality, growth, and socialization. McGraw (1992) also mentions two additional types of loneliness: emotional and social. Emotional loneliness results from lack of romantic intimacy, whereas social loneliness

occurs when an individual feels deprived from friendship or companionship. Similarly, cultural loneliness occurs when individuals or groups feel as though they are not connected with conventional groups; it is typically marked by a lack of unity and distinctiveness. Finally, cosmic loneliness occurs when individuals feel alone in the universe; such individuals typically feel as though there is no guiding light in an unfriendly world.

As a result of these studies, no single, fundamental type of loneliness emerges. While some may view loneliness as existential, reactive, pervasive/nonspecific, or psychotic (Applebaum, 1978), others classify it into psychoanalytical, existential, and or interactional types (Buchholz & Catton, 1999). Furthermore, individuals such as McGraw (1992) break loneliness into even smaller categories, including cosmic, cultural, social, emotional, existential, ethical, ontological, communicative, epistemological, and metaphysical.

## **Loneliness and Health**

### **Health-Related Quality of Life**

Sometimes termed as being one's functional status, level of life satisfaction, well-being or contentment, quality of life (QoL) is a frequently used expression that lacks a widespread definition (Taylor et al., 2008). In recent years, the health of an individual has become an increasingly important component of their overall QoL (Hall, Krahn, Horner-Johnson, & Lamb, 2011; Liu & Guo, 2007), leading to the development of questionnaires designed to test HRQL. In their article on individuals with chronic illnesses, Taylor et al. (2008) explain that among young people, HRQL is a very personal experience that is complex and ever-changing. It includes aspects of not only physical functioning ability,

but also psychological and social functioning, as well as individual goals and objectives. HRQL also takes into account the severity of the particular condition or disease, as well as what the individual expects as the outcome of their illness.

Because HRQL is very complex and specific to the individual, it can be influenced by several different mental and physical states, a condition to which loneliness is no exception. Aanes et al. (2010) explain that one's social environment can have a profound influence on health in both direct and roundabout ways. This is extensively referenced in the article by Cacioppo and colleagues (2009), who explain that social isolation can have significant effects on the lives of animals, ranging from decreasing the lifespan of a fruit fly to causing obesity and Type 2 diabetes in mice. Past studies have noted that loneliness is significantly connected with a low QoL (Liu & Guo, 2007), and has been negatively correlated with items on HRQL measures, such as the 36-Item Short-Form Health Survey, which measures constructs such as physical and mental well-being. In fact, loneliness has been shown to have deleterious effects on both mental and physical health, as discussed below.

In summary, HRQL is a complex phenomenon, marked by quality of life in health-related domains, such as function and well-being (Taylor et al., 2008). Specific to the individual, HRQL encompasses both mental and physical aspects of health.

### **Loneliness and Mental Health**

One of the most common correlates of loneliness seen is depression (Aanes et al., 2010; Cheng & Furnham, 2002; Han & Richardson, 2010; Lasgaard, Goossens, & Elklit, 2011; Liu & Guo, 2007; Segrom & Passalacqua, 2010; Theeke, 2009). In fact, in their study on adults in Norway, Aanes et al. (2010) found that loneliness mediated 75% of

depressive symptoms. While depression and loneliness are frequently found together, however, they still exist as distinct constructs (Cacioppo et al., 2006). Cheng and Furnham (2002) found that not only were depression and loneliness associated, but males reported higher levels of loneliness, whereas females were more likely to suffer from higher levels of depression. Research is still unclear as to the potential casual relationship between the two. Han and Richardson (2010) found that loneliness was a risk factor in the development of depression, and was the strongest predictor among older adults. In contrast, Lasgaard, Goossens, and Elklit (2011) found that being depressed can increase loneliness over a period of time; however, loneliness did not predict depression. Despite the unclear relationship, the two constructs are still frequently observed together.

In addition to depression, loneliness has also been frequently observed with lower subjective well-being (Cacioppo et al., 2009), decreased life satisfaction (Kim, 1997), schizophrenia (Van Rockel et al., 2010), attempted suicide, or suicide ideation (Cheng & Furnham, 2002; Lasgaard, Goossens, Bramsen, Trillingsgaard, & Elklit, 2011; Neto & Barros, 2003), anxiety (Applebaum, 1978; Liu & Guo, 2007; Sprangers et al., 2010), and even personality disorders (Segrin & Passalacqua, 2010). Kim (1997) notes that lonely individuals are more likely to perceive their lives as being more stressful, variable, and overpowering than those who are not lonely. In addition, loneliness has even been implicated with Alzheimer's Disease (AD), as Wilson et al. (2007) found not only that AD was twice as prevalent in lonely individuals, but also that such participants with AD also had a lower level of cognition at the baseline of their study, and a faster decline once the study had started.

Based on the studies listed above, loneliness is likely to be especially prevalent among individuals who are depressed (Aanes et al., 2010; Cheng & Furnham, 2002; Han & Richardson, 2010; Lasgaard, Goossens, & Elklit, 2011; Liu & Guo, 2007; Segrom & Passalacqua, 2010; Theeke, 2009), suicidal (Cheng & Furnham, 2002), have anxiety (Applebaum, 1978; Liu & Guo, 2007; Sprangers et al., 2010), and are under stress (Segrin & Passalacqua, 2010).

### **Loneliness and Physical Health**

In addition to mental health, loneliness has also been associated with a wide range of medical conditions. One of the most prominent among these is cardiovascular disease (Aanes et al., 2010; Van Rockel et al., 2010). Cacioppo et al. (2002) found that individuals who were lonely had more peripheral resistance and higher age-related increases in blood pressure compared to those who were less lonely. Hawkey, Thisted, Masi, and Cacioppo (2010) similarly discovered that high levels of loneliness during their baseline study predicted increases in systolic blood pressure up to four years later. Women may be especially at risk, as Thurston and Kubzansky (2009) found that those who were lonely had an increased chance of coronary heart disease. Older adults are likely at risk as well, as loneliness is associated with coronary conditions in the elderly population (Sorkin, Rook, & Lu, 2002). In contrast, perceived social support has been shown to lower the chances of developing atherosclerosis (Hawkey, Burlison, Berntson, & Cacioppo, 2003), indicating that social support, or lack of loneliness, is associated with better cardiovascular functioning.

Loneliness has also been strongly correlated with higher rates of mortality (Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010). Cacioppo et al. (2002)

believes that since loneliness is correlated with several different health problems, this has the potential to lead to various illnesses which may account for the high level of morbidity and mortality. Loneliness may indeed have a significant impact on health, as it has been found to be a risk factor equivalent to obesity, inactive lifestyles, and potentially even smoking (Cacioppo et al., 2002). Similarly, loneliness itself has been linked to higher rates of developing metabolic syndrome and obesity, which may additionally increase mortality rates (Whisman, 2010).

Loneliness has also been linked with immune system functioning, as Hawkey et al. (2003) found that high levels of social support and connectedness were associated with improved immunosurveillance, indicating that loneliness would be correlated with poorer immune system function. However, a study by Wawrzyniak and Whiteman (2011) uncovered contradicting results, in that loneliness was not correlated with immunity levels in first-year college students. Self-injury has also been implicated with loneliness, as one study found that high school students who felt familial loneliness had higher rates of self-harm (Lasgaard, Goossens, Bramsen, et al., 2011). Interestingly, Dellinger-Ness and Handler (2007) found the opposite result, in that among college students, loneliness levels were actually lower in the self-harm groups, although they did not measure the specific type of loneliness.

Difficulties with sleep have additionally been linked to loneliness. Hawkey, Preacher, et al. (2010) discovered that individuals tend to have poorer quality of sleep when they feel lonely. Lonely individuals were more likely to report more problems functioning during the day, which was not only independent of hours of sleep, but also aided in predicting further levels of loneliness. Segrin and Domschke (2011) reflect this

line of reasoning, suggesting that lonely individuals may be more prone to health problems because they have less effective recovery processes, including sleep.

When assessing health, it can sometimes be useful to examine self-rated health (SRH), as it can provide an important insight into the individual's health, especially in predicting mortality among older adults (Nummela, Seppänen, & Uutela, 2011).

According to the results by Nummela et al. (2011), older adults who never or rarely experienced loneliness had higher SRH, indicating better health. Good health was also reported more frequently among those who were not lonely, which suggests that loneliness can have potential effects on the health of older adults.

In summary, individuals who are lonely are at an increased risk of cardiovascular disease (Aanes et al., 2010; Van Rockel et al., 2010), higher rates of mortality (Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010), reduced immune functioning (Hawkey et al., 2003), and poor quality sleep (Hawkey, Preacher, et al., 2010).

### **Loneliness and Health Behaviors**

While loneliness has been associated with several different mental and physical health problems, the exact mechanisms by which this primarily happens is still unclear.

Several studies have suggested that lonely individuals are more likely to engage in more high-risk and less health-promoting behaviors (Shankar et al., 2011; Theeke, 2010).

Theeke (2010) found that lonely older adults were not only more likely to live inactive lifestyles and use more tobacco, they were also more likely to have several chronic illnesses and spend more time in nursing homes. Hawkey, Thisted, and Cacioppo (2009) found similar results among adults, with lonely individuals engaging in exercise significantly less often.

It is important to note, however, that not all studies reflect these findings. Cacioppo et al. (2002) did not find that lonely individuals engaged in more negative health behaviors than those who were not lonely. Additionally, Hawkley et al. (2003) found similar results, in that loneliness did not predict health behaviors, although it was initially suggested that health problems due to loneliness may not appear until later in life. Such loneliness may set up risk factors early, as young adults are frequently engaged in making several decisions such as location, education, romantic partners, and health habits, all of which can influence health at a later time.

### **Creativity**

Since research on creativity was first conducted, one of the central problems that researchers have encountered has been defining exactly what creativity is. El-Murda and West (2004) note that creativity is one of the most complex human behaviors, asserting that it may be impossible to define such a multifaceted construct. In his paper on measurement of creativity, Hocevar (1981) also believes that creativity is one of the most difficult concepts to measure. Most attempts at defining creativity have yielded nonspecific, loose explanations (Gibson, 2005; Kaufmann, 2003), with several differences of opinion among psychologists (Amabile, 1983).

Current definitions of creativity range from abilities that are distinctive of creative people (Guilford, 1950), to characteristics such as problem-solving, having a strong imagination or being very innovative, and even originality (El-Murda & West, 2004). Milbrandt and Milbrandt (2011) note that creativity may take the form of sudden insight, ingenuity, or even personality traits. Similarly, Kaufmann (2003) explains that creativity is often associated with novelty, originality, and suitability. It is important to note,



however, that culture may also play a part in one's definition of creativity, as more collective Eastern countries tend to see creativity as a form of self-expression within a culture, whereas the West views it more as a product-oriented, individualistic pursuit (Mumford, 2003). Despite the lack of agreement on its definition, creativity is overwhelmingly viewed as being a positive trait (Gibson, 2005; Simonton, 2000). In fact, Simonton (2000) argues that creativity is one of the most significant behaviors of the human race, and is frequently acknowledged as a sign of positive mental health, although at times it can be linked with psychopathology. Likewise, Milbrandt and Milbrandt (2011) acknowledge that creativity and art may be biologically necessary for the human race, as both aid in adapting to changes in our environment, as well as allowing us to enjoy ourselves and honor life.

Taken as a whole, such studies suggest that creativity is a positive experience (Gibson, 2005; Simonton, 2000) that is associated with innovation, originality (El-Murdad & West, 2004), as well as novelty (Kaufmann, 2003), although such traits may change from culture to culture.

### **Characteristics of the Creative Individual**

One of the most common characteristics linked with creativity is that of intelligence. Mumford and Gustafson (1988) believe that the two constructs are extraordinarily similar, in that they both correspond to very intricate and difficult-to-define constructs. According to Amabile (1983), intelligence is a part of what constitutes creativity, although other factors must play a part in its development. In fact, those who have a higher IQ are generally expected to be more creative individuals, versus those who have a lower IQ (Guilford, 1950). It is important to note, however, that intelligence and

creativity are not the same construct. Intelligence is typically considered the ability to think sensibly, act with resolve, and interact with the environment, whereas creativity, as previously discussed, is associated with the ability to create new and constructive ideas (Cho, Nijenhuis, Vianen, Kim, & Lee, 2010).

In addition to intelligence, Mumford (2003) recognized other character traits of those who are creative, including independence, introversion, the ability to be open and flexible with ideas, imaginative, as well as being self-confident and achievement-oriented. Even overconfidence, aggressiveness, and the desire for power have been associated with creativity. Guilford (1950) describes the creative individual as one who has a certain understanding of problems, can produce several new ideas, can synthesize and separate ideas, is flexible, and is able to work with several different ideas at once, as well as being able to evaluate the final product. In order to be creative, the individual may also need a match between their knowledge, sphere of influence, and even personality traits (Amabile, 1983).

Mumford and Gustafson (1988) argue that creativity can be developed, to some extent, through the individual's environment. If the creative individual is exposed to a variety of situations, grows up in an environment that fosters the advancement of intellectual aptitude, has creative role models, develops autonomy and independence, has mentors during the beginning stages of their career, and grows up in a less disciplined and strict environment, they may have a greater chance of becoming creative. Guilford (1950) differs slightly in his opinion that creativity can be anticipated from almost everyone. The main issue in creativity is its stability—those who are labeled as creative will frequently display more of the particular creative behavior than other individuals.

Succinctly, creativity is a trait that is closely linked to intelligence (Mumford & Gustafson, 1988), and is commonly found in independent, introverted, open, imaginative, and self-confident individuals. It may be developed through different experiences, or exist as a stable individual trait (Guilford, 1950).

### **Creativity Research**

The development of creativity research is a relatively new phenomenon, with most research occurring after J. P. Guilford's (1950) address to the American Psychological Association (APA), encouraging them to investigate the area of creativity (Simonton, 2000). Since that time, research on creativity has increased, yielding several different measurement instruments. Hocevar (1981) explains that such instruments, and research itself, are quite diverse, as the result of the intricacy of creativity and the many different ways in which it can be studied. Mumford (2003) reflects this belief, stating that because creativity is so complex, different paradigms may be needed in order to explain the process.

Amidst the study of creativity, one of the most commonly studied areas is divergent thinking (Hocevar, 1981). Under this category, ideational fluency, or the capability to create several different ideas, has frequently been tested in studies of creativity (Hocevar, 1979). In his study on ideational fluency in college students, Hocevar (1979) found that originality scores were consistent and significant. However, when ideational fluency was controlled for, the reliability disappeared, indicating that the originality scores were the result of ideational fluency, rather than originality itself.

There are several different methods by which creativity can be measured. Hocevar (1981) reviewed several different measures of creativity that were available at that time,

including attitude and interest inventories; personality inventories; biographical inventories; teacher, supervisor, and peer ratings; judgment of creative products; the study of important, distinguished individuals; and self-reported creative behaviors and accomplishments. Hocevar (1981) believed that the latter was the best way in which to measure creativity, as not only do such items have an acceptable level of face value, but participants tend to know themselves better than others. In addition, Hocevar (1981) claimed that past behavior is the best predictor of prospective behavior, indicating that if an individual had done creative works in the past, they were likely to continue doing them in the future, a characteristic example of Guilford's (1950) argument about the stability of creativity.

Creativity research is a relatively new field in psychological research, with several different instruments each attempting to measure certain aspects of the construct, with perhaps the most common aspect being divergent thinking (Hocevar, 1981). One of the most well-established ways of measuring creativity is through self-reported creative behaviors.

### **Creativity and Loneliness**

In the literature, creativity has at times been associated with loneliness. According to Tick (1988), the struggle of loneliness is necessary in order for an individual to be creative. He explains how, in order for the person to create, they must be slightly nonconformist; in doing so, they allow for their thoughts, feelings, and awareness to change for self-expression. He believes that by disconnecting oneself, individuals are able to discover their true spirit and collect what they need in order to create. Tick (1988) further maintains that many of the struggles and problems of lonely individuals will also

exist in those who are creative, although potentially more severe since they will be strengthened by the creative process. He asserts that, as a therapist, the goal of dealing with such individuals is to help them to welcome solitude, while simultaneously managing loneliness. Essentially, one needs to “treat the remarkably sensitive without harming their remarkability,” (Tick, 1988, p. 133).

Moustakas (1961) shares many of the same ideas, pointing out that many individuals who are eminent in areas such as literature, science, and music, among others, are likely to be lonely. Moustakas (1961) believes that loneliness itself is a type of creative experience, given that it transpires effortlessly from oneself. It permits the individual to face his or her loneliness, allowing them to “...exercise and actualize this capacity and in the process to become sensitive and aware of the world in a deep and meaningful way,” (Moustakas, 1961, p. 43). He explains that as one expresses their creativity and uniqueness, the person sometimes can appear different or strange to others, which further initiates more loneliness.

Similarly, Niederland (1976) explains how creativity itself is an isolated activity, whereby the individual becomes withdrawn from the environment and focuses on ideas, thoughts, and dreams. Through loneliness, although distressing, individuals have the heightened ability to experience wonderment and curiosity, and are able to see that such consciousness and information are gained through being alone.

In contrast to the views by Tick (1988), Niederland (1976) and Moustakas (1961), Mahon, Yarcheski, and Yarcheski (1996) found that loneliness was not associated with creativity. Their study on 300 adolescents in varying age groups found an inverse relationship between loneliness and creativity, indicating that higher levels of loneliness

were associated with lower levels of creativity. These results were subsequently replicated in a second study (1999) by the same authors, who examined creativity levels among 68 undergraduate students, and found the same contrary relationship between the two variables. Mahon et al. (1999) suggested that creativity may be more common among young adults who are not lonely or lacking in self-confidence, although they noted that further studies were needed on the topic.

Although few studies in the literature currently address the relationship between creativity and loneliness, the relationship appears to be slightly more established between creativity and solitude. In their article on the benefits of solitude, Long and Averill (2003) indicate that spiritual, religious, artistic and creative benefits can result from spending time alone. The authors argue that in order to be creative, one needs freedom, citing several different examples of artists who have escaped to places of solitude in order to facilitate the creative process.

Newick (1982) additionally outlines the importance of aloneness in creativity, suggesting that solitude itself does not provide creativity; instead, solitude provides the opportunity for individuals to face themselves, which subsequently can result in creative behavior. She also cites personality traits such as independence and individuality as being important to the creative process.

Shainess (1989) also replicates these views, suggesting that in order for creativity to occur, an individual must be able to endure aloneness and separation from the outside world, which may include loneliness. This separation is crucial, as it allows the individual to reflect on their thoughts and ideas.

It should be noted that, although loneliness and solitude are not the same construct, they are closely related, with perhaps loneliness being a type of solitude that is associated with negative feelings (Long et al., 2003). According to this logic, if creativity is indeed gained through solitary endeavors, it is reasonable that loneliness may produce the same traits in some individuals. Additionally, the personality traits of independence and individuality that Newick (1982) associated with creative minds, are frequently some of the benefits that result from loneliness, according to Moustakas (1961).

The relationship between creativity and loneliness has not been extensively studied in the literature. Some studies argue that loneliness, as well as solitude, are beneficial in the creative process (Long & Averill, 2003; Moustakas, 1961; Newick, 1982; Tick, 1988), while others have found the opposite to be true (Mahon et al., 1996, 1999).

### **Creativity and Health**

Creativity and health, both mental and physical, are intertwined in complex and delicate ways. In their study on depression and anxiety, Silvia and Kimbrel (2010) found that such traits explained very little variance in creativity, regardless of whether it was divergent thinking, creative behaviors or achievements, or creative self-concepts, indicating a weak, insignificant relationship between depression, anxiety, and creativity.

Eisenman (1990) also examined the relationship between mental health and creativity, by testing schizophrenic, manic-depressive, and psychotic-depressive patients on creativity measures such as story-telling and shape preference. On both measures, the experimental group had significantly lower levels of creativity scores compared to the control group, indicating that mental illness is negatively associated with creativity.

One's state of health can also impact creativity levels. Eisenman (1990) also studied creativity levels in those with herpes, diabetes, and influenza. In both the herpes and diabetes groups, creativity scores did not undergo a significant change; however, the influenza group, understandably, had a significant decrease in creativity scores.

When studying creativity and health, the mind-body relationship becomes particularly important. Cohen (2006) presents several examples of how creativity can benefit health, particularly among older adults. Engaging in creative pursuits allows individuals to feel a sense of mastery, which can subsequently support immune system functioning; can help increase brain plasticity by frequently challenging the mind; and can improve health through social support, as many creative endeavors are done in groups (Cohen, 2006).

When experiencing health problems or difficult illnesses, creativity also plays a role. Reynolds (2004) studied 24 women with chronic illness and found that creativity allowed the individual to express herself in ways that she was unable to physically. Instead of being filled with worry, fatigue, and pain, the patients were able to absorb themselves fully in their work and act on their impulses to finish their creative endeavor. Furthermore, Reynolds (2004) discovered that, among women who had recently been diagnosed with a chronic illness, creativity aided them in accepting their illness. In addition, illness even helped to inspire creativity. In this way, creativity also serves as a type of coping mechanism, allowing the individual a valuable way of managing their illness.

The relationship between creativity and health has garnered mixed results, with some studies finding little association between mental health and creativity (Silvia &



Kimbrel, 2010), while others have found negative associations between mental and physical illness and creativity (Eisenman, 1990). Creativity does appear to have benefits, however, in helping individuals regain control in their environment (Cohen, 2006), as well as the potential to be used as a coping mechanism (Reynolds, 2004).

### **Views of Loneliness**

Past literature regarding views on loneliness has been relatively sparse, with a precise understanding of the loneliness experience being absent (Rosedale, 2007). Many view loneliness as either a normal part of human life, or a sign of a problem or disorder (Applebaum, 1978). The loneliness experience is predominately described in the literature as being negative (Fitts et al., 2009; Long et al., 2003; Mellor et al., 2008; Neto & Barros, 2003; Ponzetti, 1990; Rosedale, 2007), often depicted as unpleasant, distressing, or a painful desire for relationships with others, an experience that most individuals usually seek to avoid. Moustakas (1961) echoes this view, saying that children who are lonely "... begin to suffer deep feelings of guilt and inadequacy as [they] learn to regard [their] loneliness as 'bad' and as a kind of sickness," (p. 40). This may perhaps explain why those with loneliness are frequently hesitant to reveal it, as they are apprehensive that it will be observed as a weakness, a personal shortfall, or that they are unable to relate to others (Rosedale, 2007).

When examining others' views on loneliness, it is important to differentiate between loneliness and aloneness, as previously discussed. Loneliness is not merely aloneness; it is a distinct subjective experience in which the individual does not feel that his or her social needs are met (Mellor et al., 2008). In contrast to loneliness, solitude has generally been associated with positive outcomes such as spiritual growth and creativity

(Long et al., 2003). In fact, many religious and creative individuals seek solitude in order to increase the aforementioned traits. Buchholz and Catton (1999) sum up such areas of thought, asserting that loneliness is distressing, while solitude is not. In fact, Long et al. (2003) explain that negative solitude experiences can be considered loneliness, suggesting that loneliness can be arranged under the umbrella of solitude, only existing when one has negative feelings regarding their aloneness. Buchholz and Catton (1999) found similar results when examining adolescents' views on solitude and loneliness. Most saw loneliness as being undesirable, whereas solitude was viewed more neutrally, being neither a positive nor negative experience.

Loneliness itself is even viewed differently, depending on one's work or theoretical perspective. Rosedale (2007) summarizes how philosophical, psychological and nursing perspectives each perceive loneliness. In the nursing approach, loneliness is seen as a breakdown of health and a lack of meaning. The psychological approach views loneliness as a distressing separation from loved ones, but acknowledges that it can sometimes provide incentives to find new connections and discover new possibilities. The philosophical approach is somewhat similar, insisting that loneliness is a central part of being human, and is a fundamental aspect of transitioning from one important area of life to the next.

Rosedale (2007), in line with the philosophical approach she describes, poses the question of what would happen if loneliness was not viewed as a problem. In her study on breast cancer survivors, Rosedale (2007) duly notes that women found loneliness to be a familiar experience that made them more aware of their links with others, and provided new meanings. While loneliness may be distressing for most, it is important to consider

that one may still find positive meaning in the experience. Greer (1953) explains that “growth and creativity are ever lonely and disquieting, and while the results of both are rewarding and a stage of growth achieved is a solid and satisfactory base from which to leap forth anew, no one ever pretended they were especially comfortable,” (p.28). Accordingly, it stands to reason that, although unpleasant, loneliness has the potential to provide some benefits.

Moustakas (1961) argues that such benefits of loneliness are indeed true. Loneliness is a natural experience; the result of one’s development of individuality (Moustakas, 1961). Such experiences can help an individual to grow as an individual, develop deeper connections with others, and increase the individual’s insight, compassion, and kindness. Through loneliness, individuals can better appreciate feelings such as lightheartedness and joy, belongingness, acceptance, and realization of one’s self. Moustakas (1961) explains that, although the experience of loneliness is weary, sorrowful, and difficult, it allows for wisdom, beauty, and the promise of better things.

While most research regards loneliness as a negative experience (Fitts et al., 2009; Long et al., 2003; Mellor et al., 2008; Neto & Barros, 2003; Ponzetti, 1990; Rosedale, 2007) that is typically regarded as a personal weakness (Rosedale, 2007), it is important to consider that the condition yields positive benefits as well. Such gains may include personal growth, compassion, and maturation (Moustakas, 1961).

### **Summary**

Loneliness is a feeling experienced across the world (Özdemir & Tuncay, 2008) that occurs when an inconsistency exists between the relationships that an individual desires, and the ones that are present (Fitts et al., 2009; Mellor et al., 2008; Segrin &

Passalacqua, 2010). It is a subjective experience (Neto & Barros, 2003) that is different from solitude (Long et al., 2003), and affects millions of Americans (Ponzetti, 1990). Loneliness is particularly common among young adults and adolescents (Özdemir & Tuncay, 2008; Ponzetti, 1990; Van Rockel et al., 2010), likely due to the transition of moving away from home and developing their independence.

In addition to transitioning into adulthood, there are several risk factors associated with loneliness, including poor relationships with parents (Ponzetti, 1990), lack of economic security (Buchholz & Catton, 1999), being single or having a chronic illness (Theeke, 2009), and using passive coping styles rather than active ones (Cecen, 2008). Genetics may also play a role in developing loneliness, as some studies have estimated a heritability component of up to 50% (Sprangers et al., 2010). Shyness has also been implicated in loneliness (Booth et al., 1992; Cacioppo et al., 2006; Fitts et al., 2009; Jackson et al., 2002; Ponzetti, 1990), in addition to personal characteristics such as negative evaluations about most aspects of their lives, social perfectionism (Chang et al., 2011), and self-defeating humor styles (Fitts et al., 2009).

Loneliness has been associated with both problems in mental and physical health. Those who experience loneliness are more likely to be depressed (Aanes et al., 2010; Cheng & Furnham, 2002; Han & Richardson, 2010; Lasgaard, Goossens, & Elklit, 2011; Liu & Guo, 2007; Segrin & Passalacqua, 2010; Theeke, 2009), engage in suicide attempts and suicidal ideation (Cheng & Furnham, 2002; Lasgaard, Goossens, Bramsen, et al., 2011; Neto & Barros, 2003), experience anxiety (Applebaum, 1978; Liu & Guo, 2007; Sprangers et al., 2010), and have an increased risk of Alzheimer's Disease (Wilson et al., 2007). Physical symptoms such as cardiovascular disease (Aanes et al., 2010;

Cacioppo et al., 2002; Hawkey, Thisted, et al., 2010; Thurston & Kubzansky, 2009; Van Rockel et al., 2010), higher rates of mortality (Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010), and difficulties with sleep (Hawkey, Preacher, et al., 2010) have also been correlated with loneliness. Several studies have also linked loneliness with negative health behaviors (Shankar et al., 2011; Theeke, 2010), although not all studies replicated these results (Cacioppo et al., 2002; Hawkey et al., 2003).

In addition to health, loneliness has also been associated with creativity. Although the construct does not have a widely-accepted definition (Gibson, 2005; Kaufmann, 2003), it is frequently associated with areas such as problem-solving, having a strong imagination, being innovative, original, or coming up with new ideas (El-Murad & West, 2004), and is frequently found among those who are highly intelligent (Guilford, 1950). Many assert that loneliness is a prerequisite for creativity (Moustakas, 1961; Tick, 1988), claiming that one must go through the struggle of loneliness in order to fully understand what they are capable of and express themselves, although others such as Mahon et al. (1999) found that creativity is instead more common among the non-lonely.

Creativity has also been linked with health. Some have found poor evidence between mental health and creativity (Reynolds, 2004), at least in the case of depression, while others have shown that individuals with more severe mental illnesses such as schizophrenia, bipolar, and those with psychotic-depressive disorders are likely to demonstrate lower levels of creativity (Eisenman, 1990). Eisenman (1990) additionally discovered that more severe, demanding physical illnesses, such as influenza, can lower creativity levels, whereas illnesses such as diabetes or herpes exhibit no change. Cohen

(2006) additionally noted how creativity could support physical health and well-being through a sense of mastery, an increase in brain plasticity, and social support.

Similar to creativity, there is no precise understanding of how to explain the experience of being lonely (Rosedale, 2007). Most individuals acknowledge that loneliness is a distressing experience that is negatively viewed (Long et al., 2003; Moustakas, 1961; Rosedale, 2007). When dealing with views on loneliness, it is important to differentiate between loneliness and solitude. The former is a subjective experience of painful isolation (Mellor et al., 2008), whereas solitude is simply time spent alone. Buchholz and Catton (1999) help to distinguish the two with their study on adolescents, in which they found that loneliness was typically viewed as a negative experience, while solitude was seen as more of a neutral occurrence. Many argue, however, that while loneliness may be a distressing experience, benefits can be gained through experiencing it (Moustakas, 1961; Rosedale, 2007). In fact, Moustakas (1961) argues that undergoing the lonely experience can leave an individual with more compassion, happiness, and wisdom.

In this study, it is proposed that those who view loneliness as being a positive experience will have lower levels of loneliness. Although the effects of views of loneliness upon level of loneliness have not been explicitly investigated in past studies, research by Rosedale (2007) and Moustakas (1961) has indicated that loneliness has benefits such as finding new meaning and individual growth. If an individual is able to recognize these benefits and hold loneliness in a positive light, he or she may be able to cope better with the loneliness, allowing it to run its course without succumbing to

further isolation and depression, which would subsequently worsen the feelings of aloneness.

It is also expected that both levels of loneliness and views on loneliness will be positively associated with creativity, as Tick (1988) argues that loneliness is necessary for the process of creativity, indicating that the more lonely an individual is, the more likely it is that he or she will be creative. Additionally, a person who views loneliness as a positive experience will likely be more aware of possible benefits from the condition, and therefore may display higher levels of creativity.

Based on the literature, it is also hypothesized that a negative correlation will exist between one's level of loneliness and HRQL. Several studies have acknowledged the relationship between loneliness and poor mental health conditions such as depression (Aanes et al., 2010; Cheng & Furnham, 2002; Han & Richardson, 2010; Lasgaard, Goossens, & Elklit, 2011; Liu & Guo, 2007; Segrom & Passalacqua, 2010; Theeke, 2009), decreased life satisfaction (Kim, 1997), or anxiety (Applebaum, 1978; Liu & Guo, 2007; Sprangers et al., 2010), as well as physical health issues including cardiovascular disease (Aanes et al., 2010; Van Rockel et al., 2010), poor immune system functioning (Hawkley et al., 2003), and higher rates of mortality (Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010). Because ill health results in a lower HRQL, it is logical that more loneliness would result in poorer health, and therefore a lower HRQL.

It is also hypothesized that more positive views of loneliness will be associated with higher scores on the HRQL measure. As previously mentioned, individuals who view loneliness in a positive light are more likely to be aware of its benefits in personal growth and individuality (Moustakas, 1961). In this way, it is hypothesized that positive

views of loneliness will act as a sort of coping strategy, allowing the individual to remain optimistic and positive about their loneliness experience, which may result in better health, as they may not become as absorbed in the negative aspects of the condition.

In the study, it is additionally hypothesized that creativity will be positively correlated with HRQL. According to the study by Eisemann (1990), mental illness and poor physical functioning were found to be negatively associated with creativity. Based on these results, it is logical that as the health of an individual improves (resulting in a higher HRQL), so too would their desire to engage in creative pursuits. Cohen (2006) and Reynolds (2004) lend further credence to such claims, suggesting that creativity can play an important part in maintaining control and acting as a coping mechanism, respectively, indicating that creativity can act as an aid in potentially improving or maintaining health.

It is also expected that views of loneliness will mediate the relationship between one's level of loneliness and HRQL. As discussed above, high levels of loneliness have been associated with poor mental and physical health (Aanes et al., 2010, Cacioppo et al., 2002, 2009; Segrin & Passalacqua, 2010). Because positive views of loneliness are expected to be associated with a higher HRQL, it is hypothesized that the latter will act as a mediator, allowing a person who may be lonely, yet with a positive view of the situation, to better cope with it and protect themselves from damaging health effects.

Finally, it is hypothesized that views of loneliness will act as a mediator between creativity and HRQL. As mentioned before, it is expected that creativity will be associated with a higher HRQL. Because those who have positive views of loneliness will likely be more aware of potential benefits, such as creativity (Tick, 1988), they may be more likely to use creativity to promote their health, versus a creative individual who



viewed loneliness as being a negative experience. In case of the latter, the individual's negative views on loneliness may prevent creativity acting in a positive way upon health. According to Tick (1988), creative individuals are likely to be lonely, or have experienced loneliness in the past, so they may be more likely to have specific views about loneliness, which would subsequently impact HRQL.

### **CHAPTER III: RESEARCH DESIGN AND METHODS**

Based upon the hypotheses just discussed, several research questions guided the study and the analyses conducted, which are discussed below.

- 1) Are views of loneliness associated with level of loneliness?
- 2) Do levels of loneliness correlate with creativity?
- 3) Do views on loneliness correlate with creativity?
- 4) How is HRQL associated with views on loneliness, level of loneliness, and creativity?
  - A. Is level of loneliness associated with HRQL?
  - B. Are views of loneliness associated with HRQL?
  - C. Is level of creativity associated with HRQL?
- 5) Do views on loneliness mediate the relationship between the level of loneliness and HRQL?
- 6) Do views on loneliness mediate the relationship between creativity and HRQL?

#### **Participants**

Participants for the study consisted of undergraduate students enrolled in the Fall 2011 semester at Texas State University-San Marcos, in San Marcos, Texas. Participation was voluntary and open to all undergraduate students. Data were collected from 253 individuals in the study. However, 50 individuals were removed due to 1) failure to complete the survey after the consent form, 2) failure to complete the survey after

completing questions on demographic information, 3) failure to complete necessary questions on the UCLA Loneliness Scale (Version 3), the SF-12, or the six questions regarding views on loneliness. As a result, 203 individuals comprise the study sample. This final sample consisted of 150 females (73.9%) and 51 males (25.1%), with two individuals choosing not to disclose their gender. Participants ranged in age from 17 to 59 years ( $M = 22.55$ ,  $SD = 5.29$ ). Overall, 59.6% of the sample was Caucasian, 27.6% were Hispanic or Latino, 6.9% were Black or African American, 3% were two or more races, 1.5% were Asian, 1% was Native Hawaiian or Pacific Islander, and .5% was American Indian or Alaska Native.

Most participants were psychology majors (40.4%), followed by biology (8.9%), anthropology (6.9%), exercise and sports science (4.9%), fashion merchandising (4.4%), computer science (3.4%), communication disorders (2.5%), as well as a mix of 29 other majors (28.6%) (see Table 1). Regarding marital status, 81.8% were single, 8.9% were living with another individual, 7.4% were married, 1.5% were divorced, and .5% were separated; no individuals were widowed. Additionally, GPA's for the sample ranged from 0 – 4.0 ( $M = 3.17$ ,  $SD = 0.53$ ).

Table 1

*Frequencies and Percentages for Demographic Variables*

Variable	N	Percentage
<b>Sex</b>		
Female	150	73.9%
Male	51	25.1%
No Response	2	1%
<b>Age</b>		
15-20	82	40.3%
21-25	85	41.9%
26-30	14	7%
31-35	12	6%
36-40	2	1%
41-45	1	.5%
46-50	1	.5%
51-55	0	0%
56-59	1	.5%
No Response	5	2.5%
<b>Ethnicity</b>		
Caucasian	121	59.6%
Hispanic or Latino	56	27.6%
Black or African American	14	6.9%
Two or More Races	6	3%
Asian	3	1.5%
Native Hawaiian or Other Pacific Islander	2	1%
American Indian or Alaska Native	1	.5%
<b>Major</b>		
Psychology	82	40.4%
Biology	18	8.9%
Anthropology	14	6.9%
Exercise and Sports Science	10	4.9%
Fashion Merchandising	9	4.4%
Computer Science	7	3.4%
Communication Disorders	5	2.5%
Art	4	2%
Mathematics	4	2%
English	4	2%
Accounting	4	2%
Geography	3	1.5%
History	3	1.5%

Table 1 – Continued

*Frequencies and Percentages for Demographic Variables*

Variable	N	Percentage
<b>Major</b>		
Criminal Justice	3	1.5%
Education	3	1.5%
Engineering Technology	2	1%
Undecided	2	1%
Biochemistry	2	1%
Business Management	2	1%
International Studies	2	1%
Chemistry	2	1%
Social Work	2	1%
Public Administration	2	1%
Respiratory Care	2	1%
Communications	1	.5%
Business	1	.5%
Journalism	1	.5%
Kinesiology	1	.5%
Engineering	1	.5%
Finance	1	.5%
Nursing	1	.5%
Political Science	1	.5%
Spanish Literature	1	.5%
Family and Child Development	1	.5%
Animal Science	1	.5%
Electronic Media	1	.5%
<b>Marital Status</b>		
Single	166	81.8%
Living with another	18	8.9%
Married	15	7.4%
Divorced	3	1.5%
Separated	1	.5%
Widowed	0	0%
<b>GPA</b>		
0.00 – 0.90	1	.5%
1.00 – 1.90	0	0%
2.00 – 2.90	56	28.3%
3.00 – 4.00	132	65.6%
No Response	14	6.9%

## **Self-Report Measures**

### **Demographic Information**

The first section of the survey consisted of demographic assessment (see Appendix A), where variables such as sex, age and ethnicity were measured. Participants were also asked to list their major from a list of six different options, including art, psychology, biology, chemistry, music, and mathematics; if their major was not listed, they had the opportunity to enter their major. Current marital status was also measured by having participants list whether they were married, divorced, single, widowed or separated. They also had the option to choose “living with another,” for those who may be in a committed relationship, yet are not married. Collegiate GPA was also assessed.

### **UCLA Loneliness Scale (Version 3)**

Level of loneliness was measured by the UCLA Loneliness Scale, Version 3 (Russell, 1996) (see Appendix B). This scale is a 20-question survey which asks participants about their relationships with others. The survey assesses participant feelings about lack of companionship, closeness with others, isolation, and whether they feel they have meaningful relationships in their lives. Participants are asked to rate from 1 – 4 how well the provided statements apply to them. Scores can range from 20 to 80, with higher scores being more indicative of higher rates of loneliness. According to Russell (1996), the third version of the survey has high internal consistency, ranging from .89 to .94, and a test-retest reliability of .73 over 12 months. Convergent validity scores reached .65, .72, and -.68 when compared to the NYU Loneliness Scale, Differential Loneliness Scale, and Social Provisions Scale, respectively.

**SF-12 Health Survey**

The SF-12 Health Survey is a 12-question survey that assesses the physical, psychological, and general health of each participant (Ware, Kosinski, & Keller, 1996). Participants are asked about their general health as well as limitations and problems in physical activities and psychological functioning within the past four weeks (see Appendix C). For example, the survey measures one's ability to climb stairs, engage in moderate activities, amount of pain, energy, or sadness, among others. In this way, researchers are able to get a general grasp of the participant's mental and physical health, limitations, and level of functioning. The survey produces two different scores: one for mental health, and another for physical, both of which can range from 0 to 100, with higher scores being indicative of better health, and can thus provide a general measure of mental and physical quality of life. According to Ware et al. (1996), it has a test-retest correlation of .89 for the physical component, and .76 for the mental component. Compared to the longer, 36-question test version, the SF-12 has a median validity estimate of .67 for physical aspects, and a median of .97 for mental components (Ware et al., 1996).

**The Creative Behavior Inventory**

The Creative Behavior Inventory (see Appendix D) was used to measure creativity among participants. The survey consists of 90 items that assess participants' past creative behaviors in six subscale areas including literature, crafts, music, art, math and science, and performing arts (Hocevar, 1979). It should be noted, however, that most participants did not answer each of the 90 questions, as they initially had the opportunity to choose which creative sections apply to them (such as literature, crafts, or art sections),

before answering questions in the subsequent category. In that way, they were able to avoid answering questions for sections that did not apply to them. Scores for the Creative Behavior Inventory can range from 0 to 270, with higher scores indicative of higher rates of creativity. Internal consistency scores ranged from .89 to .74, although a slightly lower score of .63 was found for the math-science section of the survey (Hocevar, 1979). Although a specific value for the validity of the Creative Behavior Inventory could not be determined, intercorrelations among the six creativity subscales ranged from .35 to .76 for females, and .17 to .68 for males (Hocevar, 1976), indicating construct validity. In addition, Hocevar (1980) found evidence of convergent validity, in that the subscales of crafts, performing arts, math and science, as well as total creativity significantly correlated with ideational fluency (another term for divergent thinking, that is frequently associated with creativity) according to Guilford's Alternative Uses, Plot Titles, and Consequences tests. Hocevar (1981) additionally argued that past behavior is one of the best predictors of future behavior, to which creativity is no exception. By surveying participants' previous engagement in creative activities, it provides a useful indicator of future creative behavior. Hocevar (1981) also mentioned that most self-report creativity checklists have a high degree of face validity. Dollinger (2011) furthermore acknowledged the past extensive usage of the Creative Behavior Inventory among researchers.

### **Views on Loneliness**

Views on loneliness consisted of a series of six questions, designed to assess participants' views on whether they perceive loneliness to be a positive or negative experience. In his book on loneliness, Moustakas (1961) asserts that loneliness can help



an individual to grow in awareness, knowledge, as well as helping to find new answers to problems. He also suggests that the experience of loneliness may afford the individual to learn more about themselves. Although the lonely experience does provide these benefits, Moustakas (1961) understood and noted that loneliness can be a very difficult experience for individuals that can hold them back from life. Similarly, Tick (1988) suggests that in order for a person to be creative, they must experience loneliness, but acknowledges that loneliness can sometimes lead to sorrow and hopelessness. These assertions by Moustakas (1961) and Tick (1988) form the basis for the questions regarding views on loneliness, as they imply that some individuals will view loneliness as a positive experience, while others will experience a more negative process, in addition to having benefits and disadvantages. Questions were based on the overall themes in both pieces (see Appendix E).

Questions one, two, and five frame the loneliness questions in a positive light. The first question, which addresses loneliness and creativity, reflects the strong connection between loneliness and creativity for which Tick (1988) argued. The second question, which assesses inspiration as a result of loneliness, was included because inspiration is frequently a part of finding new meaning, as well as creativity. The fifth question, which asks to what degree loneliness helps the participant to grow as a person was also reflective of one of the strongest themes within Moustakas' (1961) book. In contrast, questions three, four, and six present loneliness in a more negative view so that the questions are balanced and subsequently present loneliness in more than one way. The third question, which addresses drawbacks, was incorporated to assess whether the individual views loneliness as having benefits or disadvantages. Question four, which

assesses the impact of loneliness on quality of life, was included to again determine whether the individual finds positive aspects in loneliness, such as inspiration, new meaning, or other variables that were mentioned by Moustakas (1961) and can contribute to a higher quality of life. Question six was created to assess the participants' specific views about loneliness.

The six questions are, to some extent, different ways of asking whether the individual believes that some positive (or negative) effect occurs as the result of loneliness. As previously mentioned, they address the main themes that Moustakas (1961) and Tick (1988) discuss within their writings. Each strongly relates to one's subjective meaning of loneliness, and thus are included in the survey. Additionally, such questions about views on loneliness suggest that it will have discriminant validity when compared to measures such as the UCLA Loneliness Scale, as the former addresses views and meanings of loneliness instead of the frequency of lonely feelings, in the case of the latter. Questions were rated on a five point Likert scale.

### **Procedure**

Participants were recruited through the classes of Texas State University—San Marcos. In order to gain a representative sample from across the University, several different classes were targeted. These included Introduction to Fine Arts (ART 2313), Art Theory and Practice (ART 3370), College Algebra (MATH 1315), Calculus I (MATH 2471), Introduction to Statistics (PSY 3301), Virology (BIO 3442), General Chemistry I (CHEM 1341), Music Theory I (MU 1211), Music in the Elementary Classroom (MU 3370), Introduction to Financial Accounting (ACC 2361), Intermediate Accounting I (ACC 3313), Basic Animal Science (AG 1445), Flowers and Plants for Interior Design

(AG 3306), Organizational Performance and Competitive Advantage (BA 5351), Linear Algebra (MATH 3377), Power Technology (TECH 2344), Modern Biology I (BIO 1320), Organic Chemistry I (CHEM 2341), Cultural Anthropology (ANTH 1312), Microbiology (BIO 2400), Children's Language Acquisition (ECE 4300), British Literature 1785+ (ENG 2320), Principles of American Government (POSI 2310), Introduction to Microcomputer Applications (CIS 1323), World Geography (GEO 1310), Elementary Physics (PHYS 1320), Educating Students with Mild Disabilities (SPED 4344), Introduction to Psychology (PSY 1300), Biological Anthropology (ANTH 2414), Renaissance Modern Art (ARTH 2302), Chemistry for Non-Science Majors (CHEM 1430), Introduction to Criminal Justice (CJ 1310), Principles of Microeconomics (ECO 2314), Developmental Writing (ENG 1300), Lifespan Development (FCD 1351), Intro to Fashion Merchandising (FM 1330), Real Estate (FIN 3301), Computer Application in Statistics (PSY 3353), and Health Psychology (PSY 3361).

Forty-one professors and instructors were contacted to see if they would be willing to distribute the survey link to their students, or allow for a brief presentation in which the study would be discussed and the link to the survey subsequently provided. Of these, ten (ART 2313, MATH 2471, PSY 3301, MU 1211, ACC 3313, BIO 2400, ANTH 2414, FM 1330, PSY 3353, PSY 3361) indicated that they would forward the email to their students. A brief presentation was given to the MATH 2471 class. Additionally, the FM 1330 professor offered to distribute the survey to all Fashion Merchandising majors at Texas State. Two instructors (BIO 1320 and ECO 2314) declined to distribute the survey to their students.

The survey was provided through the Survey Monkey website, an online survey software that allows individuals to securely distribute surveys and collect results. After providing informed consent, participants were taken to a screen that displayed each of the surveys (Demographic Information, UCLA Loneliness Scale [Version 3], the SF-12 Health Survey, Creative Behavior Inventory, and the six questions regarding views on loneliness). After completion of the questionnaires, participants were taken to a screen which thanked them for their participation. Participants who initially failed to provide informed consent were also immediately redirected to this screen without taking the surveys.

## CHAPTER IV: RESULTS

### Scoring

#### UCLA Loneliness Scale (Version 3)

The UCLA Loneliness Scale (Version 3) consisted of 20 questions, with answer options including “Never,” “Rarely,” “Sometimes,” and “Never.” Based on the scoring instructions included in the survey, the response “Never” was scored as 1 point, “Rarely” was scored as 2 points, “Sometimes” as 3 points, and “Always” as 4 points. Items were reverse-scored as necessary and subsequently added together. Scores can range from 20 – 80, with higher scores being indicative of higher rates of loneliness. In the current study, each of the 203 participants completed this survey, with scores ranging from 22 – 78 ( $M = 43.98$ ,  $SD = 10.64$ ). These scores are similar to the results found by Wawrzyniak and Whiteman (2011), who studied loneliness levels in college students ( $M = 40.60$ ,  $SD = 9.90$ ), as well as Russell (1996) who tested the survey in college students ( $M = 40.08$ ,  $SD = 9.50$ ). Reliability was also assessed for the survey, yielding good internal consistency ( $N = 20$ , Cronbach’s  $\alpha = .93$ ).

#### SF-12 Health Survey

The SF-12 Health Survey consisted of 12 questions, used to assess physical and mental health. The survey was scored according to the directions provided by Sanda, Wei, and Litwin (2002), whereby each item response was assigned a standardized value, which was added or subtracted, and later summed, and added to a predetermined value in

order to create a mental health score and a physical health score. One discrepancy was found between the scoring instructions and the survey used in the study. On the final question, the survey allowed for six answer choices (“All of the Time,” “Most of the Time,” “A Good Bit of the Time,” “Some of the Time,” “A Little of the Time,” and “None of the Time”); however, the scoring instructions only referred to five answer choices (“A Good Bit of the Time” was removed). In order to remedy this result, the middle two answer choices (“A Good Bit of the Time” and “Some of the Time”) were given the same mental and physical standardized values, similar to the procedure followed by Maxfield (2000) in the Department of Defense Beneficiaries report.

The SF-12 Health Survey produces two different scores: one for mental health, and another for physical, both of which can range from 0 to 100, with higher scores being indicative of better health. In the current study, each of the 203 participants completed the SF-12 survey as well. Physical scores ranged from 26.42 – 65.26 ( $M = 53.14$ ,  $SD = 7.48$ ), and mental scores ranged from 14.08 – 64.33 ( $M = 41.26$ ,  $SD = 12.06$ ). These scores are similar to those reported by the Utah Department of Health (2001), which indicated that national averages for physical and mental health within the 18-24 age group were  $M = 53$  and  $M = 46$ , respectively. Reliability scores were calculated for both mental and physical sections of the SF-12, using standardized values. The mental section yielded good reliability ( $N = 12$ , Cronbach’s  $\alpha = .72$ ), although the physical section had low levels of reliability ( $N = 12$ , Cronbach’s  $\alpha = .48$ ). Due to scoring methods, items were not able to be deleted in order to improve reliability.

### **The Creative Behavior Inventory**

The Creative Behavior Inventory consisted of 90 questions, with answer options including “Never,” “Once or Twice,” “3-5 Times,” and “More than 5 Times.” Answers were scored so that a response of “Never” resulted in 0 points, “Once or Twice” resulted in 1 point, “3-5 Times” resulted in 2 points, and “More than 5 Times” resulted in 3 points. As a result, after summing each of the items, scores could range between 0 – 270, with higher scores indicating higher levels of creativity. In the current study, scores ranged between 0 – 135 ( $M = 38.26$ ,  $SD = 25.74$ ). Such results are similar to those found by Nicol and Long (1996), who also used the Creative Behavior Inventory ( $M = 38.90$ ,  $SD = 15.80$ ). Reliability for the Creative Behavior Inventory was also calculated, which yielded good levels of consistency ( $N = 90$ , Cronbach’s  $\alpha = .93$ ). Subscales of the instrument varied in reliability, with the crafts subscale yielding the highest reliability ( $N = 19$ , Cronbach’s  $\alpha = .92$ ), followed by literature ( $N = 14$ , Cronbach’s  $\alpha = .88$ ), art ( $N = 8$ , Cronbach’s  $\alpha = .87$ ), music ( $N = 12$ , Cronbach’s  $\alpha = .85$ ), performing arts ( $N = 12$ , Cronbach’s  $\alpha = .82$ ), general ( $N = 15$ , Cronbach’s  $\alpha = .74$ ), and math and science ( $N = 10$ , Cronbach’s  $\alpha = .68$ ).

### **Views on Loneliness**

Views on loneliness were assessed through six questions, by means of five different answer options including “Strongly Disagree,” “Disagree,” “Neutral,” “Agree,” and “Strongly Agree.” In order to create a composite score based on the six questions, answers were scored so that a response of “Strongly Disagree” resulted in 1 point, “Disagree” resulted in 2 points, “Neutral” resulted in 3 points, “Agree” resulted in 4 points, and “Strongly Agree” resulted in 5 points. Three of the items were reverse-scored.

The six questions addressed to what degree participants believed that feeling lonely increased creativity ( $M = 2.51, SD = 1.13$ ), helped them to feel inspired ( $M = 2.35, SD = 1.17$ ), caused drawbacks ( $M = 2.09, SD = 0.84$ ), decreased overall quality of life ( $M = 2.15, SD = 0.97$ ), helped the individual to grow as a person ( $M = 2.78, SD = 1.18$ ), or viewed loneliness as a negative experience ( $M = 2.45, SD = 1.11$ ). Scores for each of the items ranged from 1 to 5, with the exception of the question regarding drawbacks of loneliness, which yielded scores from 1 to 4. The final scores were then added and averaged in order to create a final composite score, which ranged from 1 – 4.83 ( $M = 2.39, SD = 0.78$ ). Higher scores were associated with more positive views of loneliness, and lower scores were associated with more negative views of loneliness.

Because the six questions used to assess views on loneliness had not been previously used, reliability was assessed. Results showed a high level of reliability ( $N = 6$ , Cronbach's  $\alpha = .82$ ).

## Results

### Hypothesis 1

In order to test the first hypothesis, a Pearson correlation was calculated between the total score on the UCLA Loneliness Scale and views on loneliness (using the composite score), to assess if there was a correlation between one's level of loneliness and views of loneliness. The correlation indicated that the two variables were approaching significance ( $r(201) = .12, p = .099$ ), indicating that those who experience higher levels of loneliness may be more likely to have positive views of the condition (see Table 2).



Table 2

*Correlations between Survey Variables*

Measure	Physical Health	Mental Health	Creativity	View of Loneliness
Loneliness	-.05	-.57**	-.18**	.12~
Physical Health		-.23**	-.01	.06
Mental Health			-.03	.12~
Creativity				.12~
View of Loneliness				

Note. ~ $p < .10$  \* $p < .05$  \*\* $p < .01$

**Hypothesis 2**

A second Pearson correlation was calculated between the total score on the UCLA Loneliness Scale and the total score on the Creative Behavior Inventory, to determine if there was a correlation between loneliness and creativity. The results yielded a significant negative correlation ( $r(201) = -.18, p = .009$ ), indicating that as one's level of loneliness increased, creativity level decreased (see Table 2).

**Hypothesis 3**

A third Pearson correlation examined the relationship between the composite score for views on loneliness and the total score on the Creative Behavior Inventory, to assess whether there was an association between views on loneliness and creativity. As shown in Table 2, the correlation was approaching significance ( $r(201) = .12, p = .096$ ), demonstrating that individuals who are creative may be more likely to view loneliness as a positive experience.

#### **Hypothesis 4**

Pearson correlations were also assessed between the SF-12 mental and physical health scores and the composite score for views on loneliness. The relationship between mental health and views on loneliness was approaching significance ( $r(201) = .12, p = .090$ ), showing that individuals with good mental health may be more likely to view loneliness as a positive experience. The relationship between physical health and views on loneliness was not significant ( $r(201) = .06, p = .367$ ), as shown in Table 2.

The relationship between the SF-12 mental and physical health scores was also compared to the UCLA Loneliness Scale score. Although there was a non-significant correlation between physical health and level of loneliness ( $r(201) = -.05, p = .446$ ), the relationship between mental health and level of loneliness was significant ( $r(201) = -.57, p < .001$ ), indicating that as one's level of loneliness increased, their mental health decreased (see Table 2).

Pearson correlations were also computed to assess the relationship between the SF-12 mental and physical health scores and the total score on the Creative Behavior Inventory. Correlations were non-significant for both mental ( $r(201) = -.03, p = .672$ ) and physical ( $r(201) = -.01, p = .859$ ) scores (see Table 2).

#### **Hypothesis 5**

The fifth hypothesis assessed whether views on loneliness mediated the relationship between level of loneliness and HRQL. For example, does level of loneliness affect one's view of loneliness, which then influences an individual's mental and physical HRQL? Specifically, does the relationship between level of loneliness and HRQL become smaller or non-significant when views of loneliness are controlled for? In order

to test for true mediation, significant correlations must exist between the three variables being assessed. Because significant correlations only existed between the total score on the UCLA Loneliness Scale and the mental health scores of the SF-12 (it was not significant for the physical subscale), true mediation for this hypothesis was unable to be tested. However, because the composite score for views of loneliness was approaching significance when compared to scores both on the UCLA Loneliness scale and mental health measurement of the SF-12, linear regression was used to test for possible mediation despite lack of significant correlations between each of the variables. In these analyses, there was no evidence of mediation (see Table 3), as both scores remained significant. If true mediation was occurring, for example, level of loneliness would no longer be significant. However, because both scores remained significant, it indicates that both are significant in predicting mental health in this sample, and that no mediation is occurring. Although mediation was not established, results indicated a large portion of mental health variance was explained by views of and levels of loneliness ( $R^2 = .36$ ).

Table 3

*Regression Analysis for Mediation between Level of Loneliness, Views of Loneliness, and Mental Health*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Level of Loneliness	-.67	-.60	-10.47	.000
View of Loneliness	2.92	.19	3.32	.001

Because mediation was not found between the variables, moderation was tested to determine whether views on loneliness affected the strength or direction of the

relationship between level of loneliness and mental health. For example, would positive views on loneliness result in more significant correlations between level of loneliness and mental health, as well as possibly changing the direction of the relationship between the variables? Total scores for the UCLA Loneliness Scale and views on loneliness were centered and subsequently used to create an interaction term, using linear regression to test for any effects. Results showed that no moderation was occurring ( $t(202) = 1.630, p = .105$ ) as seen in Table 4. Had moderation been occurring, the interaction variable between views of loneliness and level of loneliness would have been significant, indicating that views of loneliness and level of loneliness interact to affect mental health.

Table 4

*Regression Analysis for Interaction between Views on Loneliness and Level of Loneliness*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
<b>Step 1</b>				
Views of Loneliness (centered)	2.92	.19	3.32	.001
Level of Loneliness (centered)	-.67	-.60	-10.47	.000
<b>Step 2</b>				
Views of Loneliness x Level of Loneliness	.13	.09	1.63	.105

The physical health measurement of the SF-12 test did not have significant (or approaching significant) correlations with any of the other variables; therefore, mediation was not examined using this variable.

## Hypothesis 6

The sixth hypothesis assessed whether views on loneliness mediated the relationship between creativity and HRQL. For example, does creativity affect one's view of loneliness, which then influences mental and physical aspects of HRQL? Specifically, does the relationship between creativity and HRQL become smaller or non-significant when views of loneliness are controlled for? As previously discussed, testing for mediation requires significant correlations between each of the variables. Because no correlations were significant, or approaching significance, between scores on the Creative Behavior Inventory and mental or physical health scores on the SF-12, mediation was not able to be tested.

Because the relationships between views and loneliness and creativity, as well as views of loneliness and the mental subscale were approaching significance, moderation was also tested among the variables to examine whether views on loneliness affected the strength or direction of the relationship between creativity and HRQL. For example, would positive views on loneliness result in a significant correlation between creativity and mental health aspects of HRQL, as well as possibly changing the direction of the relationship between the variables? In order to test for moderation, centered scores for both the Creative Behavior Inventory and views on loneliness were calculated, subsequently creating an interaction term. Linear regression was used to test for any effects. Results showed that no moderation was occurring ( $t(202) = -.210, p = .834$ ), as seen in Table 5. Had moderation been occurring, the interaction term would have been significant, indicating that views of loneliness and creativity interact in order to affect mental health.

Table 5

*Regression Analysis for Interaction between Views on Loneliness and Creativity*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Step 1				
Views of Loneliness (centered)	1.93	.13	1.76	.079
Creativity (centered)	-.02	-.04	-.63	.529
Step 2				
Views of Loneliness x Creativity	-.01	-.02	-.21	.834

**Additional Exploratory Analyses**

Additional analyses were examined, in order to explore the relationship between academic major and views on loneliness. Majors were organized based on the particular college that their major belonged to (College of Applied Arts, College of Business Administration, College of Education, College of Fine Arts & Communication, College of Health Professions, College of Liberal Arts, and College of Science and Engineering), and coded into values between 1 and 7, resulting in seven different groups. Results showed that views of loneliness were not significantly different among categories of major ( $F(7, 195) = .57, p = .777$ ).

Linear multiple regression was used to assess factors such as sex, age, ethnicity, major, marital status, and GPA in predicting views of loneliness. Categorical predictor variables such as sex, ethnicity, and major were coded, resulting in quantitative data that allowed for use of linear regression. As shown in Table 6, only age was found to be a

significant predictor ( $t(183) = -2.54, p = .012$ ), indicating that as individuals become older, they were significantly more likely to view loneliness as being a negative experience.

Table 6

*Multiple Regression Using Demographic Variables to Predict Views of Loneliness*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Sex	.16	.09	1.17	.245
Age	-.02	-.20	-2.54	.012
Ethnicity	-.00	-.00	-.04	.968
Major	.00	.08	1.04	.299
Marital Status	-.05	-.06	-.77	.444
GPA	.17	.12	1.48	.141

Linear multiple regression was additionally used to assess total scores on the UCLA Loneliness Scale, the Creative Behavior Inventory, and the mental and physical health scores from the SF-12 in predicting views on loneliness. All scores were significant, even when controlling for age (see Table 7), indicating that better physical and mental health, higher levels of creativity, and higher levels of loneliness were all associated with more positive views of loneliness.

Table 7

*Multiple Regression Using Survey Instruments to Predict Views of Loneliness*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Step 1				
Age	-.02	-.16	-2.25	.026
Step 2				
Age	-.03	-.17	-2.50	.013
Loneliness Score	.03	.39	4.48	.000
Physical Health Score	.02	.18	2.52	.013
Mental Health Score	.03	.39	4.51	.000
Creativity Score	.01	.20	2.90	.004

Still controlling for age, the same variables were assessed using linear multiple regression, and were subsequently examined based on sex. As seen in Table 8, among females, scores for the UCLA Loneliness Scale ( $t(147) = 2.61, p = .010$ ), mental health score of the SF-12 ( $t(147) = 2.41, p = .017$ ), and creativity score ( $t(147) = 2.55, p = .012$ ) remained significant. The physical health score of the SF-12 was no longer significant.



Table 8

*Multiple Regression Using Survey Instruments to Predict Views of Loneliness – Females*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Step 1				
Age	-.02	-.10	-1.16	.248
Step 2				
Age	-.02	-.10	-1.25	.215
Loneliness Score	.02	.28	2.61	.010
Physical Health Score	.01	.10	1.10	.273
Mental Health Score	.02	.26	2.41	.017
Creativity Score	.01	.21	2.55	.012

Among males, scores on the UCLA Loneliness Scale ( $t(48) = 5.25, p < .001$ ), mental ( $t(48) = 5.28, p < .001$ ) and physical ( $t(48) = 2.82, p = .007$ ) scores on the SF-12 were significant. The Creative Behavior Inventory score was no longer significant (see Table 9).

Table 9

*Multiple Regression Using Survey Instruments to Predict Views of Loneliness – Males*

Variable	<i>B</i>	$\beta$	<i>t</i>	<i>p</i>
Step 1				
Age	-.04	-.32	-2.32	.024
Step 2				
Age	-.05	-.37	-3.45	.001
Loneliness Score	.05	.69	5.26	.000
Physical Health Score	.05	.30	2.82	.007
Mental Health Score	.05	.68	5.28	.000
Creativity Score	.01	.17	1.58	.122

## **CHAPTER V: DISCUSSION**

The main goals of this study were to examine the relationships between level of loneliness, views of loneliness, creativity, and mental and physical health aspects of HRQL. Additionally, views of loneliness were examined to see if they mediated the relationship between level and loneliness and mental and physical aspects of HRQL. Views of loneliness were also explored in order to determine possible mediation between creativity and mental and physical aspects of HRQL. These objectives were accomplished by examining scores from the UCLA Loneliness Scale (Version 3), the SF-12 Health Survey, the Creative Behavior Inventory, and six questions that addressed participants' views on loneliness. Correlations were calculated between each of the aforementioned scores; mediation using linear regression was also used as necessary.

### **Summary of Results**

Six hypotheses guided the current study. The first hypothesis centered on whether views of loneliness were associated with level of loneliness. Analyses indicated a positive relationship that was approaching significance. The second hypothesis examined the association between level of loneliness and creativity. Results indicated a significant negative correlation between the two variables. In the third hypothesis, the relationship between views of loneliness and creativity was analyzed. Results demonstrated that the positive relationship was approaching significance. The fourth hypothesis examined mental and physical health subscales of the SF-12 Health Survey to see if these were

correlated with views of loneliness, level of loneliness, and creativity. Analyses indicated that the relationship between the mental health subscale and level of loneliness was negatively significant, and that the relationship between the mental health subscale and views on loneliness was approaching significance. All other correlations were non-significant. Hypothesis five examined possible mediation between level of loneliness and the physical and mental subscales. No results of mediation were found; moderation was additionally examined but was not demonstrated. Hypothesis six aimed to additionally test for mediation between the physical and mental health subscales and creativity. Because none of the relationships between the variables were significant or approaching significance, mediation was unable to be tested. Moderation was examined, but results indicated that views of loneliness did not moderate the relationship.

Additional exploratory analyses were performed in order to further explore views of loneliness and factors relating to it. The relationship between views on loneliness and college major was examined, with results indicating that there were no significant differences between majors.

Multiple regression was also used to examine variables including sex, age, ethnicity, major, marital status, and GPA in predicting views of loneliness. Age was found to be the only significant predictor. Using multiple regression, the major variables in this study calculated from survey instruments including the UCLA Loneliness Scale, Creative Behavior Inventory, and the mental and physical health scores from the SF-12 were additionally examined in predicting views on loneliness. Results indicated that each variable was a significant predictor of views on loneliness, even when controlling for age. Results were then examined based on sex, while still controlling for age. Among females,

only scores on the UCLA Loneliness Scale, mental health score of the SF-12, and creativity score remained significant, whereas for males, only the UCLA Loneliness Scale and mental and physical health scores on the SF-12 were significant.

### **Discussion of Results**

The results suggest that individuals who are lonelier are more likely to view loneliness as a positive experience. This may be due, in part, to possible benefits that may be derived from loneliness. Moustakas (1961) indicates that loneliness can provide opportunities for an individual to grow, realize their own potential, and appreciate the world around them. It could be speculated that individuals who have a higher level of loneliness become more aware of these benefits, and therefore view loneliness in a more positive light.

The study also indicated that individuals who have higher levels of loneliness are less likely to be creative. This is in direct contrast to the work by Tick (1998) and Moustakas (1961), who argue that loneliness is somewhat of a prerequisite to being creative. Along this line of thinking, it could be suggested that individual creativity emerges after the loneliness has subsided, or when it is not at its peak. In contrast, the results found in the current study reflect those of Mahon et al. (1999), who found that loneliness was moderately inversely related to creativity. Such a finding makes sense, in that high levels of loneliness could leave the individual isolated and unhappy; the latter are states typically not associated with being creative and productive.

According to the results, the relationship between views on loneliness and creativity was approaching significance, indicating that individuals who view loneliness as being more positive are more likely to be creative. As previously mentioned,

Moustakas (1961) and Tick (1998) believed that loneliness was a trait needed in order to fully express creativity. It may be instead the appreciation of loneliness that allows for such creativity to emerge rather than level of loneliness itself. This would explain why those who have higher levels of loneliness may not necessarily be creative.

In examining HRQL with level of loneliness, results indicated a strong negative correlation between the two, specifically in the mental health subscale of the SF-12. This finding is not unexpected, as high levels of loneliness may also be correlated with issues such as depression (Aanes et al., 2010), lower subjective well-being (Cacioppo et al., 2009), and decreased life satisfaction (Kim, 1997), among others. Such states could certainly impact not only one's mental health, but overall quality of life, leading to lower mental functioning scores. It is somewhat surprising, however, that physical health scores did not have a negative correlation with level of loneliness, as the condition has been linked with conditions such as cardiovascular disease (Aanes et al., 2010), higher rates of mortality (Cacioppo et al., 2002, 2009), and lower immune system functioning (Hawkey et al., 2003). It is possible that the participants' physical health was unrelated to loneliness in the current study; however, the author suspects that such a finding may be due to the extremely low reliability coefficient that was found in the physical health subscale ( $N = 12$ , Cronbach's  $\alpha = .48$ ) that led to the non-significant result.

The relationship between HRQL (mental health subscale) and views of loneliness was also approaching significance in the study, suggesting that those who view loneliness as a more positive experience have a higher mental health-related quality of life. This makes sense in terms of what Moustakas (1961) claims, in that loneliness allows for self-growth and appreciation. The study by Rosedale (2007) also reflects these results to some

degree, explaining how, among a study of breast cancer survivors, loneliness was used as a sort of coping mechanism that allowed familiarity, meaning, and growth. Whether an individual is going through a difficult or joyous time, it makes sense that if he or she can view the experience in a positive light, they will reap the most benefits from it, therefore having better mental health.

The finding that creativity was not correlated with both physical and mental aspects of HRQL was somewhat surprising, as Eisenman (1990) found that mental illness was negatively correlated with creativity, in addition to a negative correlation between creativity and physical illness. At the same time, however, Kimbrel (2010) did not find a significant relationship between mental health factors such as anxiety and depression and their relationship with creativity. It is difficult to know why physical and mental health did not have significant correlations with creativity. It is possible that the participants in the study did not have severe enough mental or physical illnesses that would have contributed to a significant negative, or positive, correlation between the two variables. Additionally, participants may not have been aware of the role that creativity could play in potentially improving their health. Reynolds (2004) found that, among 24 women with chronic illness, creativity played an important role in helping them to cope and deal with their problems. As a result, it is possible that the individuals in the study were aware of the health benefits that could be obtained through creativity, or had no reason to seek out this information, leading to the non-significant result.

Results also indicated that there was not a significant difference between college majors and views on loneliness, which was not altogether surprising. Because most participants were psychology majors, and subsequently fit within the “College of Liberal

Arts” category, the sample sizes from each college were subsequently skewed, leading to a poor representation of all of the individual colleges.

A particularly interesting finding of the study involved how age was a significant predictor of views on loneliness, indicating that the older an individual is, the more likely they will view loneliness as being a negative experience. While no study specifically has addressed this issue, based on the argument by Moustakas (1961), it would be logical to assume that the older an individual is, the more he or she would be familiar with the experience of being lonely, and therefore be aware of the potential benefits it offers—at least to a greater extent than college-aged students. That being said, however, most of the individuals in the study were between the ages of 18-25 years of age, with very few individuals being over the age of approximately 35 years old. Because loneliness is especially common among college students (Özdemir & Tuncay, 2008), it is possible that many are not only unaware of potential benefits that loneliness may bring, but also may not be especially focused on inner growth and appreciation of the world around them. Conversely, older adults may be more wary about being alone as they grow older, therefore perceiving negative benefits of loneliness as they age.

Also of particular interest was the finding that scores on the UCLA Loneliness Scale, the Creative Behavior Inventory, and the mental and physical health scores from the SF-12 were significant in predicting views on loneliness, even when controlling for age. Such findings indicate that better physical and mental health, higher levels of creativity, and higher levels of loneliness are predictive of more positive views of loneliness. The findings are not altogether surprising, considering earlier results that showed the relationship between views on loneliness and creativity, in addition to views



on loneliness and level of loneliness to be approaching significance. In fact, the mental health subscale was also approaching significance in its relationship with views on loneliness, as previously indicated. Of special interest, however, was the finding that, when controlling for sex, the significance of some of the variables disappeared. For example, among both males and females, both the UCLA Loneliness Scale Score, as well as the mental health score of the SF-12 remained significant, regardless of sex. However, among females, the creativity score remained significant in predicting views on loneliness, compared to the males, where only the physical health score of the SF-12 remained significant. It may be possible that males place a greater importance upon physical aspects of HRQL, more so than females, which may subsequently translate into more positive views of loneliness. The same could be interpreted regarding creativity in females, although some studies have indicated that males typically report higher creativity scores (Charyton, Basham, & Elliott, 2008; Stoltzfus, Nibbelink, Vredenburg, & Thyrum, 2011).

### **Summary Statement**

This research adds to the relatively sparse field of literature in which meanings of loneliness are explored. Results showed that positive views of loneliness are associated with both high levels of loneliness and high levels of creativity; however, individuals who very lonely are also much less likely to be creative, suggesting that views on loneliness may play a role in mediating the relationship. Additionally, lonelier individuals are more likely to have a poor mental health-related quality of life, although positive views on loneliness were also associated with higher mental health. Such results suggest

that it may not necessarily be loneliness itself that leads to poor HRQL, but one's views on it instead.

Results also indicated that level of loneliness, mental and physical aspects of HRQL, and level of creativity was predictive of views on loneliness, indicating that several variables can play a significant impact on one's particular view. Level of loneliness and mental health appear to play an important role in both sexes, while creativity is especially important in females, compared to physical health in males, in predicting views of loneliness. Findings also indicated that as one ages, they tend to have a more negative view of loneliness.

### **Implications for Future Research**

Given the findings that positive views of loneliness were associated with higher levels of loneliness as well as higher levels of creativity, yet high levels of loneliness were negatively associated with creativity, future studies should examine similar variables and relationships, in order to test for possible mediation or moderation between the variables. For example, level of loneliness, creativity, and views on loneliness should be investigated further, potentially using different instruments for creativity and loneliness views, that better measure the concept being studied and have undergone more testing and scrutiny. Such tests might yield different results. In a similar vein, it may be useful to perform a similar study using a different method of assessing HRQL, as it was previously noted that the physical subscale was not very reliable and subsequently influenced results. Future studies might also focus on factors such as attitude, optimism and pessimism, and specific aspects of health, which may help to provide a more complete version of how views of loneliness may affect our well-being. Additionally,

further investigation of the benefits of loneliness may also be helpful. For example, it may be useful to examine the potential benefits that can be gained through loneliness, perhaps through studying them during particularly lonely periods in individual's lives.

In examining loneliness and views of loneliness among college students, it may also be beneficial to examine a wider array of majors to examine if loneliness varies among college students. Additionally, because this study only examined views among college students, future studies might benefit from examining older adults and their views of loneliness, or perhaps similarities and differences in views and levels of loneliness between two different age groups.

Future research would also benefit from additional work on development of a survey that assesses individual's views on loneliness. Further development of such an instrument would further help to propel research regarding views on loneliness, which is important given that little research has been performed in this area.

### **Implications for Practice**

Based on the findings, it could be implied that how one develops a particular view on loneliness is susceptible to several different factors, including mental and physical aspects of quality of life, creativity, and levels of loneliness, although other factors are undoubtedly involved. Such views appear to be a very personal and complex experience that differs from person to person. Although further studies are needed, one possible inference from the current study is that loneliness is not a universally negatively-viewed experience. For some individuals in the study, similar to what individuals such as Moustakas (1961), Tick (1988), and Rosedale (2007) believe, loneliness, while uncomfortable, brings with it benefits that make the experience worthwhile. For such

individuals, loneliness does appear to aid in creativity and mental health. Additionally, views on loneliness may be more important than the loneliness itself when managing physical or mental health problems.

By being aware of these factors, many individuals may benefit. For example, such information may be beneficial to mental health professionals who provide care to individuals who are very lonely. Such information may help them to better understand or be aware of the fact that loneliness is not always a negative experience, and better understand the viewpoints of their clients. Additionally, it would allow them to see that loneliness is not one particular problem, but a dynamic issue that likely occurs as the result of several different variables, including views about loneliness. Knowing this information would also help to provide them with better tools in which to help their clients, while at the same time being more sensitive to their needs.

On an individual level, being aware of the results has the potential to start counteracting the prevalent negative view of loneliness. By becoming more aware of potential benefits that can be obtained from loneliness, individuals may become more open to the experience, and obtain these benefits for themselves, as well as potentially decreasing the negative effects of loneliness on their health at the same time.

### **Strengths**

Within the current literature, very little has been done to investigate the role that views or meanings of loneliness have played in health. As a result, this study provides a useful starting point to continue to examine such variables.

The current study additionally had a number of other strong points. First, the study was not limited to just psychology students. Although the latter did make up a

significant majority of the sample, a large number of students from other majors did participate in the study, helping to provide a more comprehensive view of college students. Using the college population itself may have been a particular strength as well, as studies have indicated that loneliness is typically highest in young adults or adolescents (Özdemir & Tuncay, 2008; Ponzetti, 1990; Van Rockel et al., 2010), which provides an ideal opportunity to study loneliness and its effects.

Another strength of the study involved its assessment of the relationship of loneliness and creativity. Frequently, creativity and loneliness are linked together (Tick, 1988); by assessing creativity, a more comprehensive picture can be obtained about how these variables may work together.

With the exception of the physical health subscale, the reliability coefficients for each of the instruments used were strong. In particular, the views of loneliness survey yielded a Cronbach's  $\alpha$  of .81, which is especially strong for an instrument that has not undergone previous testing or development.

### **Limitations**

While the findings listed enhance the limited area of research on views of loneliness, several limitations should be noted. First, the current study only utilized a relatively small sample size of approximately 200 undergraduate students. Similarly, although attempts were made to gather a wide range of respondents for the study, most individuals who participated in the study were psychology majors, which could have affected the results.

As briefly mentioned earlier, the physical health subscale of the SF-12 had a very low level of reliability, which likely also affected the results. Such a low reliability score

was likely the cause for the significant negative correlation found between mental and physical health. It is possible that, had this subscale had higher reliability, physical scores might have resulted in more significant results compared with views of loneliness as well as other variables.

Additionally, each of the surveys distributed were self-report measures, which could have introduced biases into the results. Such surveys were also online versus on paper, which may have resulted in some students avoiding the survey due to its format.

It should also be noted that, when designing the study, no survey was available that assessed participants' views on loneliness, at least to the author's knowledge. As a result, a six-question survey had to be designed in order to test such views. Although the survey did yield high levels of reliability, factors such as its validity and effectiveness in measuring views are still unknown. Using the current survey, it was found that several relationships with other variables were not significant, but approaching significance. It is suspected that, were the survey improved by testing the methods listed above, one might discover even more significant results when compared with factors such as health, creativity, and levels of loneliness.

The Creative Behavior Inventory, which was used to provide an assessment of participants' creativity levels, was also subject to limitations. Although the survey listed several different types of creative behavior, it was very unlikely that participants would score highly in all categories (e.g., Literature, Math and Science, Music, etc.). As such, individuals could be highly creative in one field, yet attain a relatively low creativity score.

Although most of the research instruments in this study yielded high levels of reliability, other issues should be taken into account when considering internal validity, as it is likely that other factors had an impact on many of the outcome variables in this study. For example, an optimistic personality style or particular attitude might have helped to explain high levels of HRQL; life events or stressors may have also influenced levels of loneliness. Additionally, the study does not show a cause-and-effect relationship between the factors; it merely indicates that issues such as views of loneliness, level of loneliness, and creativity, among others, are related to each other. It is also difficult to determine the direction of relationship between variables, such as which variable led to changes in subsequent ones.

Because the current study utilized a convenience sample of college students, it would be difficult to generalize the results to most of the population, as the study does not examine loneliness from another age point or educational level. In addition, students were not obtained through random sampling (most were contacted through psychology classes), which may not provide generalizability to the student body as a whole. There were also far more females than males in the study, which may have impacted the results, as females may view loneliness and the factors associated with it differently than males. Other potential limitations include the online nature of the survey, which therefore exposed participants to different conditions that may have influenced the results; additionally, several participants were dropped in the beginning of the study due to failure to complete key parts of the survey, which may not provide an accurate representation of the targeted population.

## Summary and Conclusion

The goals of this study were to examine views on loneliness in relation to variables such as creativity, level of loneliness, and mental and physical aspects of HRQL, as well as the relationships between each of the variables listed. Results indicate that positive views of loneliness are associated with higher levels of loneliness, higher levels of creativity, as well as better mental and physical health, which support research by Moustakas (1961), Tick (1988), and Rosedale (2007), who argue the importance of loneliness in maturing, developing creativity, as well as coping in difficult situations, respectively. Within these results, creativity levels were especially significant for females in predicting (positive) views on loneliness, whereas physical health scores were especially important for males. Mental health and level of loneliness was significant in both groups. Age was also found to be a predictor of loneliness views, with older individuals being less likely to view loneliness as a positive experience.

Results also showed that high levels of loneliness were negatively associated with mental health, which is to be expected given the results above. In addition, loneliness is typically associated with issues such as depression (Aanes et al., 2010), which is characteristic of poor states of mental health. Additionally, creativity was found to be negatively correlated with level of loneliness, and did not have a significant relationship with mental or physical domains of health. Taken as a whole, these results may indicate that views of loneliness may still play a role in each of the variables discussed in this study. By using better health measures and an improved survey used to assess loneliness views, it is possible that views of loneliness may play an even more pivotal role in our health than was ever previously thought.



## APPENDIX A

### Demographic Assessment

Are you male or female:

- Male
- Female

Please choose your age from the drop down box below:

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- 100

Please specify your ethnicity:

- Hispanic or Latino
- White (not Hispanic or Latino)
- Black or African American (not Hispanic or Latino)
- Native Hawaiian or Other Pacific Islander (not Hispanic or Latino)
- Asian (not Hispanic or Latino)
- American Indian or Alaska Native (not Hispanic or Latino)
- Two or More Races (not Hispanic or Latino)

What is your major?

- Art
- Psychology
- Biology
- Chemistry
- Music
- Mathematics
- Other (Please Specify): \_\_\_\_\_

What is your current marital status?

- Married
- Divorced
- Single
- Widowed
- Separated
- Living with another

Please list your GPA in the space below:

## APPENDIX B

### UCLA Loneliness Scale (Version 3)

*Instructions:* The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space provided. Here is an example:

How often do you feel happy?

If you never felt happy, you would respond “never”; if you always feel happy, you would respond “always.”

NEVER  
1

RARELY  
2

SOMETIMES  
3

ALWAYS  
4

- \_\_\_ 1. How often do you feel that you are “in tune” with the people around you?
- \_\_\_ 2. How often do you feel that you lack companionship?
- \_\_\_ 3. How often do you feel that there is no one you can turn to?
- \_\_\_ 4. How often do you feel alone?
- \_\_\_ 5. How often do you feel part of a group of friends?
- \_\_\_ 6. How often do you feel that you have a lot in common with the people around you?
- \_\_\_ 7. How often do you feel that you are no longer close to anyone?
- \_\_\_ 8. How often do you feel that your interests and ideas are not shared by those around you?
- \_\_\_ 9. How often do you feel outgoing and friendly?
- \_\_\_ 10. How often do you feel close to people?
- \_\_\_ 11. How often do you feel left out?
- \_\_\_ 12. How often do you feel that your relationships with others are not meaningful?
- \_\_\_ 13. How often do you feel that no one really knows you well?
- \_\_\_ 14. How often do you feel isolated from others?
- \_\_\_ 15. How often do you feel you can find companionship when you want it?
- \_\_\_ 16. How often do you feel that there are people who really understand you?
- \_\_\_ 17. How often do you feel shy?
- \_\_\_ 18. How often do you feel that people are around you but not with you?
- \_\_\_ 19. How often do you feel that there are people you can talk to?
- \_\_\_ 20. How often do you feel that there are people you can turn to?

## APPENDIX C

### SF-12® Patient Questionnaire

SF12 ®:

Answer every question by placing a check mark on the line in front of the appropriate answer.

1. In general, would you say your health is:

- Excellent
- Very Good
- Good
- Fair
- Poor

The following two questions are about activities you might do during a typical day. Does YOUR HEALTH NOW LIMIT YOU in these activities? If so, how much?

2. MODERATE ACTIVITIES, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf:

- Yes, Limited A Lot
- Yes, Limited A Little
- No, Not Limited At All

3. Climbing SEVERAL flights of stairs:

- Yes, Limited A Lot
- Yes, Limited A Little
- No, Not Limited At All

During the PAST 4 WEEKS have you had any of the following problems with your work or other regular activities AS A RESULT OF YOUR PHYSICAL HEALTH?

4. ACCOMPLISHED LESS than you would like:

- Yes
- No

5. Were limited in the KIND of work or other activities:

- Yes

\_\_\_\_\_ No

During the PAST 4 WEEKS, were you limited in the kind of work you do or other regular activities AS A RESULT OF ANY EMOTIONAL PROBLEMS (such as feeling depressed or anxious)?

6. ACCOMPLISHED LESS than you would like:

\_\_\_\_\_ Yes

\_\_\_\_\_ No

7. Didn't do work or other activities as CAREFULLY as usual:

\_\_\_\_\_ Yes

\_\_\_\_\_ No

8. During the PAST 4 WEEKS, how much did PAIN interfere with your normal work (including both work outside the home and housework)?

\_\_\_\_\_ Not At All

\_\_\_\_\_ A Little Bit

\_\_\_\_\_ Moderately

\_\_\_\_\_ Quite A Bit

\_\_\_\_\_ Extremely

The next three questions are about how you feel and how things have been DURING THE PAST 4 WEEKS. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the PAST 4 WEEKS –

9. Have you felt calm and peaceful?

\_\_\_\_\_ All of the Time

\_\_\_\_\_ Most of the Time

\_\_\_\_\_ A Good Bit of the Time

\_\_\_\_\_ Some of the Time

\_\_\_\_\_ A Little of the Time

\_\_\_\_\_ None of the Time

10. Did you have a lot of energy?

\_\_\_\_\_ All of the Time

\_\_\_\_\_ Most of the Time

\_\_\_\_\_ A Good Bit of the Time

\_\_\_\_\_ Some of the Time

\_\_\_\_\_ A Little of the Time

\_\_\_\_\_ None of the Time

11. Have you felt downhearted and blue?

\_\_\_\_\_ All of the Time

\_\_\_\_\_ Most of the Time

\_\_\_\_\_ A Good Bit of the Time

- Some of the Time
- A Little of the Time
- None of the Time

12. During the PAST 4 WEEKS, how much of the time has your PHYSICAL HEALTH OR EMOTIONAL PROBLEMS interfered with your social activities (like visiting with friends, relatives, etc.)?

- All of the Time
- Most of the Time
- A Good Bit of the Time
- Some of the Time
- A Little of the Time
- None of the Time

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## APPENDIX D

### Creative Behavior Inventory

*Instructions:* For each item below, please click the activities in which you have participated/performed, designed/published, or won an award during your adolescent and adult life.

- Literature (i.e. editor; wrote literature [poem/song/ story/jokes story/jokes])
- Music (i.e. gave recital; wrote/record music; cut record; play instrument)
- Crafts (i.e. made crafts; cooked; gardening; knitted)
- Art (i.e. painted/sketched/drawn)
- Math and science (i.e. constructed object; designed experiment/solved problem)
- Performing arts (i.e. acted/sung/danced/directed/managed/choreographed)

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

	Never	Once or Twice	3-5 Times	More than 5 Times
1. Entered a speech context	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Wrote a play	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Planned and presented an original speech	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Took and developed your own photographs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Designed a game	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Directed or organized a political group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Performed on television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Made or helped make a film or videotape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- |  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 9. Made a musical instrument                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Helped design a float                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Planned and directed a school or community event     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Won an award for speech and debate                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Wrote a play which was given in a public performance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Made up magic tricks                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Had artwork or craftwork publicly exhibited          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### LITERATURE

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

- |   | Never                    | Once or Twice            | 3-5 Times                | More than 5 Times        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 16. Worked as an editor for a newspaper or similar organization   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Worked as an editor for a school or university literary publication   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Founded a literary magazine or similar publication  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Had a piece of literature (e.g., poem, short stories, etc.) published in a school or university publication | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Wrote poems (excluding school or university course work)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

21. Wrote the lyrics to a song (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Had a piece of literature (e.g., poem, short story, etc.) published (not in a school or university-related publication)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Wrote clever or humorous letters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Started but did not finish a novel (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Wrote and completed a novel (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Won an award for some achievement in literature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Wrote a short story (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Wrote something humorous such as jokes, limericks, satire, etc. (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Never	One or Two Organizations	3-5 Organizations	More than 5 Organization
29. Participated in a writers' workshop, club or similar organization (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## MUSIC

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

	Never	Once or Twice	3-5 Times	More than 5 Times
30. Gave a recital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Wrote music for one instrument (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Wrote music for several instruments (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Cut a record	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Won an award for musical accomplishments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Was a participating member of a symphony orchestra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Entered a contest as a musician	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Had original music published or publicly performed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Never	One or Two Years	3-5 Years	Over 5 Years
38. Played an instrument (percussion, including piano) with a reasonable degree of proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Played an instrument (brass) with a reasonable degree of proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Played an instrument (string) with a reasonable degree of proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Played an instrument (wind) with a reasonable degree of proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### CRAFTS

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

	Never	Once or Twice	3-5 Times	More than 5 Times
42. Made a craft out of metal (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Made candles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Designed and made your own greeting cards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Built a hanging mobile (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Put on a puppet show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Received an award for making a craft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Made a craft out of plastic, plexiglass, stained glass or a similar material (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Made a leather craft (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Made a ceramic craft (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Designed and made a piece of clothing (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Cooked an original dish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Prepared an original floral arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Make jewelry (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Planned and kept a garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

56. Designed and constructed a craft out of wood (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Designed and made a costume	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Made your own holiday decorations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Knitted or crocheted something (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Never	One or Two Organizations	3-5 Organizations	More than 5 Organizations
60. Participated in a craft workshop, club or similar organization (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ART

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

	Never	Once or Twice	3-5 Times	More than 5 Times
61. Painted an original picture (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Made a sculpture (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. Received an award for an artistic accomplishment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. Made cartoons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. Drew a picture for aesthetic reasons (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66. Had artwork published in a school or university publication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 67. Had artwork published (not in a school or university-related publication) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 68. Kept a sketch book (excluding school or university course work)           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### MATH AND SCIENCE

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

- |  | Never                    | Once or Twice            | 3-5 Times                | More than 5 Times        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 69. Constructed something that required scientific knowledge such as a radio, telescope, scientific apparatus, etc. (excluding school or university course work) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 70. Presented an original mathematics paper to a professional or special interest group  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 71. Had a mathematics paper published  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 72. Developed an experimental design (excluding school or university course work)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 73. Entered a project or a paper into a science contest  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 74. Applied math in an original way to solve a practical problem (excluding school or university course work)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 75. Wrote an original computer program (excluding school or university course work)  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

76. Won an award for a scientific project or paper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
77. Entered a mathematical paper or project into a contest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
78. Had a scientific paper published	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### PERFORMING ARTS

For each item, click the answer that best describes the frequency of the behavior in your adolescent and adult life. Be sure to answer every question, and don't worry about duplicate or similar items.

79. Received an award for acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
80. Received an award for performance in modern dance or ballet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81. Received an award for performance in popular dance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82. Choreographed a dance (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83. Put on a radio show	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84. Performed ballet or modern dance in a show or contest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
85. Assisted in the design of a set for a musical or dramatic production (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86. Had a role in a dramatic production (excluding school or university course work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
87. Entered a contest as a singer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
88. Directed or managed a dramatic production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Never	One or Two Organizations	3-5 Organizations	More than 5 Organizations

89. Participated in a  
drama workshop, club or  
similar organization  
(excluding school or  
university course work)

90. Participated in a  
dance workshop, club or  
similar organization  
(excluding school or  
university course work)



## APPENDIX E

### Views on Loneliness

*Instructions:* Please indicate, to the best of your knowledge, to what extent you agree with the statements below:

1. Feeling lonely helps me to be more creative.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Feeling lonely helps me to feel inspired.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Feeling lonely causes many drawbacks.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Feeling lonely decreases my overall quality of life.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. I think that feeling lonely helps me to grow as a person.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. I view loneliness as a negative experience.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## **VITA**

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